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JUNE 1917

Economic Conditions and the Birth-Rate after the War *A. B. Wolfe* 521

Railroad Co-ordination *A. V. Arragon* 542

Automobile Insurance Rates *Robert Riegel* 561

Medical Benefits under Workmen's Compensation. I *I. M. Rubinow* 580

Notes 621

Washington Notes: 621

The New War Loan—Borrowing Power of the Nation—Rates of Interest and Their Effect—Requirements of the Government—The Program of Taxation.

Book Reviews and Notices 628

REED'S *The Morals of Monopoly and Competition*; STEVENS' *Unfair Competition* (Chester W. Wright), 628.—HUSE'S *The Financial History of Boston* (H. L. Lutz), 630.—BROWN'S *Principles of Commerce* (Sumner H. Slichter), 632.—CLARK'S *A History of Manufactures in the United States, 1607–1860* (Melvin T. Copeland), 633.—ROSENBLATT'S *The Chartist Movement in Its Social and Economic Aspects;* SLOSSON'S *The Decline of the Chartist Movement;* FAULKNER'S *Chartism and the Churches*, 635.—RIDDELL'S *The Rise of Ecclesiastical Control in Quebec*, 636.—WEBNER'S *Factory Accounting*, 637.—WRIGHT'S *A History of the Third French Republic* (L.), 638.—SCOVELL'S *Cost Accounting and Burden Application*, 639.—NYSTROM'S *Retail Store Management*, 640.—*Lectures an Addresses on the Negro in the South*, 640.

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ECONOMIC CONDITIONS AND THE BIRTH-RATE AFTER THE WAR

I

It is a well-known fact that a war of any great intensity or duration checks both the marriage-rate and the birth-rate, and that after the close of hostilities and the demobilization of troops comes a year or two of recovery and sometimes of extreme rebound in marriages and births. This fact has been evidenced by practically every important war since the beginning of the publication of reliable vital statistics. War temporarily checks marriage and reproduction, war kills off its thousands or millions of men, but experience shows that in the past, with the possible exception of the extremely destructive Thirty Years' War, these ravages in the population have been quickly made good.

No vital statistics are as yet available for the years 1914 and after, and there will probably be a long delay before the warring countries publish their registration returns for the war years. Considerations of state may, indeed, make some of them loath to publish the full, true returns at all. The enormous losses of the war will of course produce increases in death-rates hitherto unexampled even in war time. That there is a correspondingly large decrease in marriages and births cannot be doubted, but none of these vital phenomena as influenced by the present war are yet amenable to

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quantitative analysis, at least outside the strongly censored registration bureaus of the individual countries. Where war produces a profound depressive effect upon marriage- and birth-rates, the post-bellum reaction seems usually to be correspondingly pronounced. Will the reaction after the present war be in proportion to the magnitude and destructiveness of the unprecedented conflict? What, indeed, will happen to the birth-rate after the war? Speculation is perhaps idle, and prophecy, however guarded, is likely to be far beside the mark; yet such large issues, political and economic, hinge upon the psychological mood of the people after the war and upon economic and social conditions as reflected in the will—or blind instinct—to mate and multiply, that no apology is necessary for an attempt to analyze roughly the probabilities.

We may first set forth briefly the facts as to the influence of the chief wars during the past fifty or sixty years. Remembering that no war in the last hundred years, with the possible exception of the Napoleonic wars, the influence of which we cannot statistically analyze, has taxed the vital and economic resources of the warring countries to anything like the point of exhaustion to which the present war will bring Europe, we may examine the probable post-bellum economic and psychological conditions in their influence on marriage and births—on the rapidity of the vital recovery of exhausted peoples.

Beginning with the Crimean War, 1854–55, there have been eleven wars worth noting in the last three-quarters of a century. Following the Crimean War came the Austro-Italian War of 1859, the aggression of Austria and Prussia against Denmark in 1864, the brief and decisive war which Bismarck engineered against Austria in 1866, the Franco-Prussian War, 1870–71, the Russo-Turkish War of 1877–78, the Boer War, 1899–1902, the Russo-Japanese War, 1904–5, the Balkan Wars, the first one lasting from October to December, 1912, the second from March to July, 1913, and finally in America our own Civil War and the Spanish-American War. This last, however, was so insignificant in proportion to the resources of the United States that, even had we the necessary vital statistics, no appreciable influence would probably be noted. Data are lacking also for the Russo-Turkish War of 1877–78.

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The Crimean War, 1854–55.—Of the powers involved in the Crimean War, France and England are the only ones for which marriage and birth data are available. In neither country was there any appreciable or certain effect on marriage- or birth-rates, either during the war or afterward. The relatively small number of men engaged, in proportion to population, the short duration of the conflict, and the fact that it was fought on distant shores explain this absence of disturbing influence. What may have been the effect in Russia and Turkey, more intimately involved, and in Sardinia, which out of her small population sent one army corps, we cannot say.

The Austro-Italian War, 1859.—France, Austria, and Sardinia were the combatants. In France no effect was apparent. In Austria the marriage-rate fell from 17.3 in 1858 to 14.8 in 1859 and rebounded immediately to 17.5 in 1860. The Austrian birth-rate fell from 43.2 in 1859 to 40.6 in 1860, but, curiously enough, never recovered.

The Danish War, 1864.—This was a small affair, measured from the standpoint of the aggressors, Prussia and Austria, but not from that of Denmark. No effect is apparent in the German or Austrian statistics, but in Denmark the marriage-rate fell from 15.0 in 1863 to 11.3 in 1864, rising again to the abnormal figure 17.8 the year following. The influence on the birth-rate was slight.

The Austro-Prussian War, 1866.—Bavaria, Saxony, Nassau, Württemberg, Baden, and Hanover all fought with Austria against Prussia, but data are at hand for only the two chief contestants and Bavaria and Saxony. Marriage- and birth-rates for these countries are given in Table I. Taking first the marriage-rates, it is apparent that in Austria, Prussia, and Saxony the war produced a decided decline and that the close of hostilities brought an equally decided reaction.[1] In Bavaria the effect was less pronounced. The table of birth-rates shows a noteworthy decline in Prussia in the year *after* the war, where it would naturally come after so brief a conflict, and a progressive though very moderate decline in Austria in 1866 and 1867. The Austrian birth-rate recovers in 1869, but the

[1] The decline of the rates in Austria in 1866 was doubtless partly due to the cholera epidemic of that year.

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Prussian rate does not reach the level of 1865 until after the Franco-Prussian War.

TABLE I

MARRIAGE-RATES*

	Austria	Prussia	Bavaria	Saxony	France
1860	17.5	16.8	13.8	18.0	15.8
1861	17.1	15.9	14.2	16.7	16.3
1862	18.0	16.8	15.0	17.4	16.2
1863	17.3	17.3	16.8	17.8	16.0
1864	16.7	17.2	16.7	20.0	15.8
1865	16.0	18.1	17.1	18.8	15.7
1866	13.5	15.5	16.8	15.8	16.0
1867	17.8	18.6	18.1	18.3	15.7
1868	18.5	17.6	15.8	19.6	15.7
1869	20.7	17.8	24.7	19.2	16.5
1870	19.4	14.7	17.8	16.7	12.1
1871	19.0	15.9	16.7	16.9	14.4
1872	18.4	20.7	21.4	20.2	19.5
1873	18.5	20.3	19.8	21.1	17.7
1874	17.9	19.4	18.4	20.2	16.6
1875	16.9	18.1	18.0	21.2	15.8

*The rates for Austria, Prussia, and France are from the *Reports* of the Registrar General of England and Wales. Those for Bavaria and Saxony are from Caudelier, *Les Lois de la population en Belgique*, pp. 21, 25.

BIRTH-RATES*

	Austria	Prussia	Bavaria	Saxony	France
1860	40.6	38.6	35.6	42.6	26.2
1861	40.0	37.5	34.9	41.0	26.9
1862	40.3	37.0	35.5	41.5	26.5
1863	39.9	39.3	37.3	43.2	26.9
1864	40.4	39.4	38.4	42.5	26.6
1865	39.1	39.1	38.1	42.8	26.5
1866	38.7	39.2	38.4	43.7	26.4
1867	37.4	36.9	38.9	40.7	26.4
1868	38.7	36.8	39.1	42.0	25.7
1869	40.2	37.7	39.7	42.4	25.7
1870	40.5	38.1	41.5	43.2	25.5
1871	39.8	33.8	37.8	39.4	22.6
1872	40.0	39.8	41.4	44.3	26.8
1873	40.9	39.6	42.5	45.3	26.1
1874	40.7	40.2	42.7	46.1	26.2
1875	40.9	40.8	43.2	45.7	26.0

* The rates for Bavaria and Saxony are from Caudelier, *op. cit.*, pp. 24, 25.

The Franco-Prussian War, 1870–71.—The emphasized rates in the tables, for the war years and the years immediately preceding and following, reveal the powerful disturbing influence of the

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greatest of modern European wars prior to 1914. Taking first again the marriage-rates, we find that the Prussian rate declined from 17.8 in 1869 to 14.7 in 1870—a fall of more than 17 per cent. The Bavarian rate fell from the exceedingly abnormal level of 24.7 in 1869 to 17.8 in 1870 and 16.7 in 1871; the Saxon rate, from 19.2 to 16.7; and the French, from 16.5 to 12.1—a decline of nearly 27 per cent. Thus the country which was hit the hardest by the war reflects that fact in its vital statistics. The recovery in the marriage-rate was immediate (1872) and complete in all the countries for which we have data. In fact, the close of the war seems to have marked the beginning of a prolonged period of high marriage-rates in the German countries.

Turning to the birth-rate, we find an equally noteworthy decline, coming, not in 1870, but, as we should expect (the war being short), in 1871. Prolific Prussia naturally suffers a greater decline (from 38.1 to 33.8) than more prudent France (25.5 to 22.6). The post-bellum rebound is pronounced in all the warring countries, and, like that in the marriage-rate, is of some duration in the German countries. The Prussian birth-rate did not again fall to the level of 1869 until 1880.

The Boer War, October, 1899, to May, 1902.—English marriage- and birth-rate statistics reflect no influence of this war.[1] It was a difficult struggle for England to bring to a close, but mainly because of its distance from England. It did not draw into the army a relatively large proportion of the male population.

The Russo-Japanese War, 1904–5.—Turning now to the Russo-Japanese War, which lasted from February, 1904, to August, 1905, we have Table II, showing again the familiar decline and recovery in marriages and births. In Russia the rebound of both the marriage-rate and the birth-rate was immediate and extreme. In Japan neither showed improvement until 1907.

The Balkan Wars, 1912–13.—In the first Balkan War, which lasted from October to December, 1912, were involved Bulgaria, Servia, Greece, Montenegro, and Turkey; in the second war, from

[1] Yet Havelock Ellis says: "At the present time English schools are sending out an unusually small number of pupils into life, and this is directly due to the South African war fifteen years ago" (*Essays in War-Time* [1917], p. 29).

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March to July, 1913, Bulgaria, Servia, Greece, Turkey, and Roumania. There are no Turkish vital statistics, and recent data are lacking for the other countries except Roumania and Servia, and for these the data are not recent enough to show the post-bellum recovery.

TABLE II

	Russia		Japan	
	Marriage-Rate	Birth-Rate	Marriage-Rate	Birth-Rate
1900	17.6	49.4	15.4	31.7
1901	17.2	47.9	16.6	32.7
1902	17.2	49.1	17.1	32.9
1903	17.8	48.1	15.9	32.0
1904	15.2	48.5	16.9	30.6
1905	15.6	44.8	14.7	30.6
1906	19.2	46.8	14.6	28.9
1907	17.6	46.6	17.7	33.0
1908	15.8	44.3	18.7	33.9
1909	15.8	44.0	17.6	34.2

Roumania was not in the first war, so the drop in the marriage-rate from 21.0 to 17.3 in 1912 must be attributed to other causes—possibly to mobilization of troops. In Servia the effect of war on the marriage-rate is most extreme—if the figures are to be trusted. Available data do not come down far enough to date to reveal the effect on the birth-rate.

TABLE III

	Roumania		Servia	
	Marriage-Rate	Birth-Rate	Marriage-Rate	Birth-Rate
1908	18.2	40.3	18.4	36.8
1909	18.4	41.1	18.7	36.5
1910	18.5	39.2	20.5	38.5
1911	21.0	42.3	20.6	36.2
1912	17.3	43.4	8.8	38.0
1913	18.4	42.1	.....	.....

The foregoing rapid survey of the European wars of the past sixty-five years and of the Russo-Japanese War shows that the decline of the marriage-rate in war time and its recovery when hostilities cease are practically universal phenomena. This ebb

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and flow fails to materialize only when the struggle is brief and insignificant in comparison to population. It is clear also that similar movements take place in the birth-rate, although with not the same promptitude or quite the same certainty.[1] In general, naturally, the larger and longer the war the more effect is produced upon the birth-rate.

It is not possible to trace with any accuracy or much certainty the influence of the American Civil War, although the experience of Europe shows what that influence must have been. The registration statistics of Massachusetts, however, give direct indication of the influence on birth-rates and marriage-rates, as Table IV shows.[2]

TABLE IV

	Marriage-Rate	Birth-Rate
1860	20.15	29.28
1861	17.72	28.63
1862	17.68	25.92
1863	17.36	24.20
1864	19.87	24.17
1865	20.60	23.87
1866	22.15	26.16
1867	.....	26.17

The writer has made an attempt to trace the influence of the Civil War on the proportion of children to women of child-bearing age, but without much success. The proportion of white children under ten years of age to total white population was only 0.2 per cent less in 1860 than in 1850, while it was 2.0 per cent less in 1870 than in 1860, and again only 0.5 per cent less in 1880 than in 1870.[3] This might be taken as certain indication that the decline in the proportion of children—a decline which, as Willcox has shown, began early in the century—was accelerated by the Civil War, were it not for the fact that equal or greater decline was registered in 1850 and 1890. The proportion of children under *five* years of age

[1] It is probable, however, that birth-rates by months would reveal the disturbing influence of war even where the annual rates do not.

[2] Baily, *Modern Social Conditions*, pp. 107, 141.

[3] *U.S. Census Bulletin No. 22*, 1905, "Proportion of Children in the United States," p. 17; also *Twelfth Census*, "Supplementary Analysis," p. 417.

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in 1870 can throw only indirect light on the problem because most of them were born after the war was over. Nevertheless, in the South particularly we might expect the decline in the proportion of children under five years of age between 1860 and 1870 to be especially marked, because the total exhaustion of the South and the continued unsettling influence of Reconstruction would prevent the normal immediate recovery in marriages and births seen in Europe, for example, after the Franco-Prussian War. Table V shows the percentage of decline in the proportion of children under five years of age in the South for all decades, for purposes of comparison, from 1840 to 1900. The decrease in 1870 is large, but not so great as in 1850, and not appreciably greater than in 1890. The data are therefore inadequate to demonstrate the effect of the war in decreasing birth-rates.

TABLE V

PERCENTAGE INCREASE (+) OR DECREASE (−) IN THE PROPORTION OF WHITE CHILDREN UNDER FIVE YEARS OF AGE TO WHITE FEMALES FIFTEEN TO FORTY-NINE YEARS OF AGE, 1840–1900

	1900	1890	1880	1870	1860	1850	1840
Northern South Atlantic....	+2.2	−14.3	+ 3.0	− 8.2	+1.1	−14.8	−1.5
Southern South Atlantic....	+1.7	− 9.9	+16.5	−14.2	−4.2	−19.1	−2.4
Eastern South Central.....	−9.0	−11.8	+ 5.1	−11.8	−4.7	−21.0	−6.0
Western South Central.....	−2.9	−12.7	+16.7	−15.1	−2.6	−18.8	−2.5

TABLE VI

	Percentage *Increase* 1880	Percentage *Decrease* 1870
Virginia*.....	9.9	.....
North Carolina.....	17.3	11.8
South Carolina.....	21.7	11.3
Georgia.....	15.0	17.9
Florida.....	5.9	16.8
Louisiana.....	9.6	10.0
Arkansas.....	14.7	14.9
Texas.....	17.8	21.0

* Change between 1860 and 1870 is not indicated because in the meantime West Virginia had been set off from Virginia.

A comparison of 1880 with 1870, however, shows that the normal decline in the proportion of children is turned into a positive and

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significant advance. The figures for 1880 reveal the South in pronounced, though belated, recovery from the vital ravages of war and Reconstruction. Nowhere else in the country is there increase in the proportion of children in this decade except in the new states, Idaho, Wyoming, and Arizona. The corresponding data for individual southern states are even more indicative of the process of recovery. That there was an extraordinarily high reproductive rate in the South after Reconstruction, between 1875 and 1880, cannot be doubted.

II

The causes of post-bellum increases in marriages and births are for the most part self-evident. War breaks up existing family relations, but, where death has not intervened, its termination restores them. Moreover, many marriages of men who have gone into the battle line and lived to tell the tale have been prevented or postponed by war, and at its close are consummated, so that marriage ceremonies which would have been spread over several years are crowded into a few months. Doubtless the joy of reunion contributes to this, as does also the fact that many widows are left economically destitute and are ready to marry almost any kind of man for the sake of a home. More subtly, it may also be that the reaction of peace times after the anarchy of war, the joy of return to civic pursuits and upbuilding home life, may create in a whole people, even in defeat, a will to live which results in a period of supernormal propagation.

So stupendous is the present conflict, however, so unprecedented, and so stimulative to the imagination, that we may well look forward to the breaking of precedents after it is over. Will the people return to the positive, constructive pursuits of life and to marriage and renewed multiplication, or will the catastrophe have been such a shock that the mechanism of the life of the masses will no longer work in the old ways? Will the women of Europe continue to breed food for nationalistic ambition, or will they institute something akin to a birth strike, such as the socialists of Germany some years ago tentatively suggested? It is possible that the psychological effect of the years of mass-murder may be stolid stagnation,

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and that the people will return to the old unreasoning habits and passions. It may be, on the other hand, that the shock will have awakened the people to a thoughtfulness and self-restraint which will lead them at once to a conscious limitation of the birth-rate. A young American student who spent eighteen months in relief work between the German lines recently came back to his classes—"to acquire a new stock of illusions," as he put it. Will the war-sickened masses of Europe go back to the old illusions? There is no particular reason, in spite of the revolution, for supposing that the Russians will not—that the Russian birth-rate, always barbarously high, will not rebound to nearly its old level. But in the Western nations the outcome is problematical; there it will depend upon both economic and psychological factors. Economic conditions will probably still play the leading rôle. It is a demonstrated fact that both the marriage-rate and the birth-rate rise in periods of prosperity and fall during hard times, but after this war—unprecedented as its shock has been and must be—the psychological condition of the people will be a factor scarcely secondary to economic forces.

Leaving out of account, for the moment, the psychic temper of the people, the level of marriage-rates and birth-rates after the war will depend primarily upon economic conditions, and specifically upon the demand for labor and the level of net wages—that is, what is left to the laboring-class family after the tax-gatherer has had his due. The economic lot of the masses in any country depends fundamentally upon the demand for labor. With a strong demand for labor, wages are high, unemployment at a minimum, and the strength, vitality, and hopefulness of the people at a maximum. Conversely, with a weak demand for labor, wages are low, unemployment prevalent, and the state of mind of the masses one either of dissatisfied unrest or of sodden inertia.

Demand for labor comes ultimately from desire for consumable commodities and services, but desire alone does not constitute effective demand. There must be ability to pay. It is certain that both in Europe and in other countries there will be an immense need—a strong desire—for consumable and capital goods of all sorts, goods which Europe has habitually produced and can pro-

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duce again as soon as normal conditions can be approached. Foreign countries, especially the United States, will have the ability to pay for European products; but in Europe itself a prolonged period of recovery will have to be gone through before anything like the buying power of ante-bellum years is again attained. One fact is certain: that industry, and demand for industrial labor, cannot be built up without a market—that is, without an effective demand for goods, and, in the last analysis, for consumers' goods. In so far as Europe can depend upon foreign demand, industrial rehabilitation will be relatively easy; and the importance of foreign markets to this end will undoubtedly cause European manufacturers to be keener competitors than ever before; but just to the extent that Europe has to depend on home markets will the task of rehabilitation be slow, difficult, and dangerous.

In the first place, the prices of all consumers' goods will be high for a considerable period—at least a year or two—after the war. Family incomes will be low, and taxes burdensome beyond imagination. The masses will perforce have to continue much the same retrenchment in expenditure that they have been compelled to make during the war. There may be, as indicated below, an increased demand for luxuries and for domestic and personal service, but for the great bulk of staple commodities, consumed by the working and middle classes, demand will be much curtailed, simply because the masses will not have the necessary net income to purchase goods as they did before the war. The most difficult step out of poverty is the first one—the securing of an initial purchasing power and effective demand for commodities on the part of the people. Given that, entrepreneurs will find a way to secure capital and to hire labor. Demand for commodities is a demand for labor, directly and indirectly, John Stuart Mill to the contrary; but an industry of sufficient extent and variety to furnish employment to a large population cannot be based upon a demand for luxuries alone. There is at least that much truth in the socialist contention that industrial depression is due to underconsumption.

There can be no doubt that in all the great countries now at war a few individuals are, during the war, reaping enormous profits, despite the heavy general taxes and the special taxes on the profits

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of munitions manufacture. The great mass of the people, however, cannot escape impoverishment. While their property may not be destroyed and while business may be only for the time being impaired, the appalling burden of taxes, the proceeds of which must largely go to pay interest on war debts, will fall upon all. The distribution of ownership of the war bonds will prove an important influence in the distribution of net income—for whoever gets the proceeds of the taxes which are levied to pay interest on war debt will have funds to spend, either for immediate-consumption goods and services or for investment in capital goods. We are not in position to know how widely the bonds have been purchased by persons of comparatively small means and how much their ownership will prove to be concentrated in the hands of the wealthy. If ownership is centralized, as it will probably prove to be, interest on war debt will go, to considerable extent, to increase expenditure for luxuries. There will be a greatly increased demand, not only for material luxuries, but for service; we may look for increased ostentation and for the entrance of many people, both men and women, hitherto of the mechanics and artisan class, into the ranks of the servant class.

It is possible, perhaps even probable, however, that the temper of the times will not be favorable to ostentatious luxury—that neither governments nor masses will "stand for it" and that some way will be found to compel the wealthy recipients of interest upon war debt to invest a large part of their income in industrial enterprises. This they may be inclined to do, even without pressure, for the interest rate will inevitably be high and attractive. Moreover, the greater the concentration of wealth the more the surplus over what is necessary to satisfy present wants—even luxurious wants—and the greater probability, therefore, of saving and investment. From this point of view industrial recovery would be more rapid under a centralization of wealth, however detrimental socially such concentration might be, than it would be where wealth is widely dispersed and income consequently not so much above immediate needs. But, on the other hand, concentration of income robs the people at large of purchasing power and thus removes the

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fundamental motive to business enterprise—the discernment, on the part of the business men, of a market for their finished products.

Turning to foreign demand for consumers' goods, we find it on a surer footing. The world outside of Europe, especially the United States, will have enormous buying power and, in the absence of high-tariff barriers, will be a good place in which to sell. The flow of gold to us during the war and the indebtedness of the Allies to us will make this a country of continued high prices. The foreign demand for German manufactures will reach impressive dimensions, and the foreign call for French silks, cottons, wines, and novelties will be greater than ever. The rich peoples of the earth will be good customers of those who now are buying of us at the desperate prices of war time. So far as this foreign demand is concerned, the two questions are whether the nations now at war can recover their capital equipment and financial organization quickly enough to take advantage of it before they go through a long period of depression, and whether foreign nations will erect tariff walls to "protect" themselves from cheap goods.

As to the demand for consumers' goods, then, no very definite conclusion can be drawn, but the most promising and effective initial demand will, in the absence of specially high tariffs, undoubtedly come from the nations not exhausted by the war. The extent and intensity of internal demand will be enormously reduced in any case, and still more so if concentrated ownership of war bonds robs the people of purchasing power through high taxes, the proceeds of which go chiefly to the rich, who will spend them either in futile luxuries or in investment which, in the face of lack of purchasing power on the part of the masses, can only gradually rehabilitate industry.

Assuming, however, that consumers' demand will be effective as an immediate spur to industrial enterprise, can Europe get the necessary money or credit with which to rehabilitate her industries at once?

In the first place, let us ask, how great will be the need of new money capital and new capital equipment? How great is the loss from actual destruction of productive wealth in Europe? The

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amount of such destruction is enormous and it is an important consideration, but, incalculable as such destruction is, and will be, upon the various battle areas, it would be easy to overestimate it. Germany, thus far, has suffered practically no loss of this kind, nor have Italy and England except for the destruction to shipping. The Russian invasion of East Prussia touched only an agricultural region. Russia's sacrifice has been far more in area of territory than in importance of the industrial centers destroyed or lost. Neither Servia nor Roumania was a manufacturing nation of importance. The German drives have occasioned vast suffering and destruction of life and wealth, but probably the loss of a comparatively small amount of industrial capital. Only in Belgium and France is the destruction of industrial wealth and the dislocation of industry upon a scale to produce disquietude concerning recuperative capacity. The destruction of a few hundred châteaux is economically an unimportant matter. It is the destruction of real capital that counts, and the extent of such destruction depends upon the breadth of the area of actual fighting, the intensity and concentration of shell fire in dense industrial communities, the duration of the war, and the character of the struggle from now on. Should the evenly balanced forces result in a virtual stalemate, until one side or the other is worn out and asks for peace, the additional destruction of capital incident to the actual fighting will not be great; but if the months to come are to witness in France or in Germany great drives over wide areas, and if the submarine blockade is as destructively effective as the Germans assert that it is, then the destruction of industrial equipment cannot fail to be appalling.

Actual destruction of industrial plants is not the only loss occasioned by war. Countless factories have been adapted, at greater or less cost, to the manufacture of munitions. These plants can probably be readapted to the pursuits of peace, however, without comparatively great cost. Such is the adaptability of modern industrial technique. Nevertheless, the cost of the changes must in the aggregate be enormous. Doubtless many factories constructed especially for the manufacture of munitions, e.g., explosives, may be practically a dead loss in times of peace.

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How great will be this industrial loss attendant upon the adaptation and readaptation of plants to the exigencies of the moment cannot be stated, but it must be added to the loss from actual destruction. In any case the total loss through destruction and through adaptation to munition manufacture will prove great enough to put an extremely serious strain upon investment funds already depleted by the demands of war.

Turning to the supply side of capital, where will investment funds be found? Germany may prove to be at considerable advantage in that she has financed her own war and kept her supply of gold at home, but if, as seems to be the case, she has done so by pyramiding credit, her house of cards may bring on a financial panic and a period of acute depression which will have a prolonged and disastrous effect upon her industries and upon the lot of her laboring population. In the case of the Allies the millions of specie exported and the immense interest charges to be met abroad will leave the people, rich as well as poor, with comparatively small funds for industrial investment.

In general, then, capital funds after the war will have to be obtained (*a*) from interest proceeds of war debt floated at home, (*b*) from those persons who have accumulated wealth during the war and have not invested surplus income in war bonds, (*c*) from foreign investors. The first source, as we have seen, will depend upon the distribution of the war bonds and the temper of their owners. The second does not seem particularly promising, though many fortunes have thus been made. The last source will probably not be available for a considerable time after peace is concluded, at least not until financial conditions become stable enough for the high interest rate to prove an irresistible attraction to foreign investors. On the whole, the outlook for a plentiful supply of funds for the immediate building up of new productive plants does not look bright, although it is quite possible that it will prove equal to a sluggish demand.

The reasonable general conclusion with regard to the demand and supply of capital seems to be that neither will show great strength. The process of upbuilding industry to normal conditions will be slow and will not result in that sudden rebound in energy

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which normally takes place after war. Consequently demand for labor at a time when demand is most essential to economic and social health will not be vigorous.

Should supply of labor remain constant, the decreased demand would involve a condition in which the working classes would have to undergo a long period of depression—low wages, unemployment, and lack of medical and hygienic care which go with insufficient family incomes. These are the conditions under which, experience shows, marriage- and birth-rates tend to decline, and we should in that case be led not to expect the normal post-bellum vital recovery.

The one condition, apparently, that can save the laboring classes from acute suffering is the fact that millions of workers will be resting beneath the earth. While, on the one hand, demand for consumers' goods will be relatively low, capital hard to get, and consequently the total demand for labor relatively low, the supply of labor, on the other hand, will also be different from what it was before the war. Just how it will differ in amount is not easily said. Millions of men will have been killed, and other millions, wholly or partly incapacitated, will be a burden upon those who are able to work. The problematical element in the labor supply will be the women. Temporarily, at least, the war has recovered the industrial capacity of women. Whether to social advantage or not, in the long run, women have shown that they can do "men's work" and do it well. Will they go docilely back to domesticity and dependence? Vast numbers will, where the home is not broken up, and where their wages are not absolutely necessary for family subsistence. Many will not, however, because there will be no home to go to; and still others, having once tasted the sweet wine of economic freedom, will refuse to go back to the old mode of living. It is just possible that government will bring pressure to bear to get them out of the factories and put men in their places, and it is not unlikely that public—that is male—sentiment everywhere will raise a hue and cry for the women to give back to the war-worn defenders of their country the jobs that were formerly theirs. But, in the aggregate, there will be a large addition to the supply of wage-workers—not only because many women will have nothing else to do, and because many will want to remain in the factories anyhow,

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but because they will all, in the absence of legal limitation, work for lower wages than men. Here again it is not at present possible to arrive at any estimate of the labor supply after the war. The value of the variables is unknown. One can only hazard the opinion that the larger entrance of women into industry and the economic pressure, on all who can, to earn an income will do much to counterbalance the loss of men by the wastage of war, especially when we take into account the probable decrease in the demand for labor (compared to war and pre-war times) due to lack of purchasing power and difficulty of securing capital funds for the rehabilitation of industrial plants.

So far as we are warranted in drawing even any tentative conclusions as to economic conditions immediately after the war, it thus seems that demand for labor will be slack, competition for work keen, unemployment general, prices of necessities high, and wages low. For years the condition of the masses will be one of extreme poverty. In so far as the marriage- and birth-rates are correlated with economic conditions, there is little to cause expectation that the normal rebound in marriages and births will occur.

Turning to the psychological factor, will the people be so depressed that they will take no heart in rehabilitation? Or will the soldiers return to industrial and civil pursuits in the temper of the young German officer who said to an American friend, "There will be more room and more opportunity for the survivors after this war. War is once in awhile necessary to thin out the population!" The example of the French after the humiliating result of 1870 suggests that a nation may recover with astonishing vigor and rapidity even in dire defeat. But the losses of the Franco-Prussian War were small compared to those of the present. Moreover, the agony was not long drawn out. Can we draw any inference from our Civil War? The South was backward and easy-going. It was a purely agricultural country. Slavery was a factor of prime import. Reconstruction was in some ways as depressing as war. There is consequently scarcely a parallel with the situation in France in 1872. The South, returning with resignation to what little was left after war and Reconstruction, settled down to stagnation for a quarter of a century. While there was

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ultimately a strong recovery in the birth-rate in the South, we have seen reason to believe that it was delayed some years after the close of the war. A new generation, in fact, had to grow up—and even a third generation—and capital venture in from the North before the South began to have any great economic momentum. Servia, Roumania, Turkey, and Southeastern Europe in general are more as our South was after the Civil War—agricultural, backward, non-industrial. As for the Germans, their government is accustomed to order the life of the people for collective ends. We may count upon it to do everything in its power to set the nation's productive powers to work when the war is over. But whether the German people can stand defeat and return stolidly to work—if work is offered—remains to be seen. And it may be that victory, to whichever side it falls, will have been so dearly bought as to leave all classes deadened and disheartened, as was the South in 1865. It is necessary to remember that this is the first war on anything like so great a scale, and the first great war between modern industrial nations—the first war since productive methods took on their full modern complexity and capital became necessary in such large amounts—for Germany in 1870 had hardly begun to enter upon her period of industrial evolution. As the size and complexity of the organism disturbed are greater, the results will be correspondingly more lastingly disastrous.

So much rebuilding, material, social, and moral, will have to be done, however, so great will be the relief in mind and body when peace comes, and so thoroughly industrialized are the habits and thoughts of the people of Western Europe, that it is not improbable that psychological depression—apart from possible industrial stagnation—will not be widespread, lasting, or acute. This is the more likely because the women will have brought a new moral force into work—the moral power which comes from earning one's own living—which will tend to counterbalance the industrial demoralization of men accustomed to trench life and thereby weaned away from the steady and unexciting routine of industrial labor.

Now in view of these many conflicting and complex economic and psychic conditions, what can be ventured as to the probable trend of marriage- and birth-rates? First as to the marriage-rate.

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If the rebound of industry should come quickly, giving a reasonably strong demand for labor, this being the only factor, the normal rise in the marriage-rate would take place at once. But labor demand is not the only factor. It is possible that the new economic lot of the women may render them less ready to marry than they would have been under the old conditions. Doubtless both church and state will thunder forth anathemas against those who are tardy in entering the matrimonial bond; doubtless lovers long separated by war and conscription may rush to each other's arms; but sober second thought, stimulated in the woman by economic independence, in the man by lack or insecurity of employment, and in both by the mighty shock of world-conflict and continent-wide slaughter, will give pause. And that pause may well prove fatal to the rise of the marriage-rate.

How will it stand with the birth-rate? Experience shows that war has an especially noticeable disturbing influence upon the number of illegitimate births. Thus we have in France:[1]

No. of Living Illegitimate Births (in Thousands)

1869	71	1873	71
1870	70	1874	69
1871	59	1875	67
1872	70		

For Germany, the numbers in thousands were:[2]

1868	168.6	1872	150.6
1869	163.3	1873	158.3
1870	165.4	1874	152.1
1871	144.4	1875	155.6

The illegitimate birth-rate will rise somewhat after the war, but the legitimate and the total rates will not be likely to manifest the usual normal post-bellum rebound. On the part of the married, economic conditions, in the first place, will produce prudence. If the marriage-rate fails to make the normal rebound because economic and psychic conditions are unfavorable to marriage, this in itself, other things being equal, will of course tend to keep down the

[1] *Annuaire Statistique de la France*, XXXIII (1913), 11.

[2] *Statistisches Jahrbuch für das deutsche Reich*, 1903, p. 25.

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birth-rate. Even should the marriage-rate recover its normal level, however, a strong tendency to birth control may be expected, which will be an additional factor retarding the rebound in the birth-rate. Church and state may use their influence against the spread of contraceptives, but it will not be effective. It is necessary to remember that the Continent has not taken a stand against the spread of contraceptive knowledge such as graces our American legal policy.

A third factor which will militate against both marriage- and birth-rates will be the altered sex-constitution, and to a lesser degree the altered age-constitution of the population. No such demographic changes have occurred since modern vital statistics began as will be revealed when the results of the present war are known. The great excess of females can have but one result—a low marriage-rate and a low legitimate birth-rate.

Militarism, nationalism—neo-cameralism and neo-mercantilism—thrive on great populations and in turn strive to stimulate that increase. Militarist and nationalist regard the "state" as an end in itself, and the people are merely means to this end. Some will call it a great end, others will call it a great illusion; but, so long as the military man is in control and so long as he can appeal to crass nationalism and chauvinism, the people will continue to be regarded as a sort of cattle. Continental officialdom outside of France has not moved, after all, very far away from Frederick the Great's view, which he expressed in a letter to Voltaire in 1741, that men are "simply a herd of deer in the park of a great noble, which has no other function than to people and fill the enclosure."[1] Cameralists and mercantilists will, no doubt, continue their patriotic demand for an undiminished birth-rate, but among the thinking people the demand will fall on deafer ears than ever before. What woman with real sense of moral responsibility, it will be asked, can consent to bear and rear children to be fed into the insatiable armies of some future senseless war? What man who has been through the hell of these war years will not pause before he wishes to be the father of boys who must in their turn, in all likelihood, go through what he has gone through, and worse?

[1] Stangeland, *Pre-Malthusian Doctrines of Population*, p. 131.

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Is it too much to hope that some such thoughts will come to the thinking middle classes? But from the masses of stolid and unthinking peasantry what are we to hope? Will their thoughtlessness, their brutality, have been reduced by war? Hardly, unless—and here is the deciding factor—unless the women who have tasted economic freedom and who at the same time have seen the male population, the fruit of their wombs, decimated shall have gained a new vision and a determination to be something more than passive mothers, accepting whatever fate authority may impose upon them and their children. If the women have, perchance, in the great shock of conflict, of work, of suffering, come to a glimmer of the light of real ethical responsibility, their moral force may join with their self-interest, and the fertility rate be kept down.

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RAILROAD CO-ORDINATION

A PLAN TO STRENGTHEN RAILROAD CREDIT THROUGH SYSTEMATIC CORRELATION OF THE RAILWAYS UNDER GOVERNMENT SUPERVISION

I.

The problem of marking out a constructive national railroad policy centers in the question of maintaining railroad credit. The inadequacy of transportation facilities is clearly due to the lack of capital funds for investment in new terminals, new lines, and new equipment. Plans for dealing with the railroad question must therefore take into account, first of all, the inability of present railroad net earnings to attract the capital required for maintaining efficient transportation.

Three principal methods have been proposed for re-establishing railroad credit upon a satisfactory basis: first, a general advance in rates; second, a system of government guaranty of earnings; and third, government ownership. Supplementary measures have likewise been suggested, such as the elimination of control by state commissions over railroad rates, administrative changes in the machinery of federal regulation, government supervision of the issue of railroad stocks and bonds, involving federal incorporation, and the legalizing of inter-railroad traffic agreements.

This present attempt to construct a comprehensive plan for the reorganization of the railroads in their relations to the public and to each other is based upon the opinion that methods already proposed are either inadequate or inadvisable. A statement, therefore, of the view taken concerning these methods should serve to make clear the premises upon which the plan for systematic correlation has been worked out.

Under the present system of regulation political obstacles will probably not permit in the future such a general increase of railroad rates as will be sufficient in itself to maintain railroad credit. This would seem especially to be true for the reason that a con-

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siderable advance in the level of rates will be required to offset wage increases. Furthermore, unless some constructive policy is established, rate advances would be based solely upon the principle of opportunism. It is not enough that advances should be secured after long delay has resulted in a condition of restricted railroad credit so severe as to have effected far-reaching injury to the transportation system. Nor, on the other hand, is it to be regarded as advisable to return to a high rate level merely on the basis of pressure from the roads. The Interstate Commerce Commission is too heavily burdened with the adjustment of rate and traffic controversies to have the additional task of dealing with general financial conditions. These should be intrusted to another responsible group of public agents, whose findings of fact shall be accepted by the Interstate Commerce Commission as the basis for general rate changes.

Concerning government guaranty of earnings, the view is held that, before such a system is tried, very much ought to be done to strengthen railroad credit, independently of financial assistance from the government. If the government should be called upon to give financial aid, under its guaranty it would acquire liens upon the railroad property, which, long continued, would lead to government ownership. Thus the roads could not avail themselves of the guaranty and retain their financial independence. Moreover, if the purpose of the guaranty system were to compel the government to bring special pressure upon the Interstate Commerce Commission for rate advances whenever decreased railroad earnings made necessary a call upon the government under its agreement, deficit financing would be established as the basis of railroad credit. No vigorous or progressive organization could be built upon such a foundation. The fluctuations in the financial needs of the roads and in the market rate of interest upon new capital flotations would not be recognized in establishing a fixed rate of guaranteed return. So long as earnings were in excess of this minimum guaranteed rate, it would be practically impossible to secure any rate advances, however justifiable.

As for government ownership, no discussion is here attempted. The plan presented is based upon the supposition that government

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ownership is inadvisable, particularly because of the likelihood of confusion between government and railroad finance and the administrative dangers that would be involved in having the railroads run by government employees.

The proposed plan of railroad co-operation contemplates the abandonment of the application of the Sherman law to railroads. It could be established, therefore, only through comprehensive legislation, such as is here outlined, superseding the existing anti-trust laws.

II. MAIN FEATURES OF PROPOSED PLAN FOR RAILROAD CO-ORDINATION

The necessity for common action in the various branches of railroad direction and operation has led to the establishment of a large number of committees and associations for unifying matters of policy and for solving questions that affect all the roads. These committees are advisory in character, but their work is of material interest to the public from the standpoint of the efficiency of the transportation system. Such bodies are: the Railway Executives' Advisory Committee, the Association of American Railway Accountants, the Car Service Commission of the American Railway Association, the American Railway Engineering Association, and similar societies and committees, temporary and permanent, covering every phase of railroad operation, including law, traffic, finance, engineering, and accounting. Would it not be advisable, in order to correlate the work of all these organizations, to bring them into legal and governmental recognition, and to give them carefully defined powers of executive action?

By way of example, those who are responsible for the financial success of the railroads condemn the unsound financial practices of certain roads. The effect of these practices upon the minds of the investing public they recognize as hurtful to the marketing of railroad securities; yet they are powerless to prevent the continuance of them. Would it not be wise to give this advisory committee of railway executives, or some similar body, power to control the rules of finance for the transportation system of the country under the proper supervision of a governmental board?

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The problem of utilizing railway equipment most effectively, upon which the Car Service Commission is engaged, has likewise been rendered exceedingly difficult of solution because that commission does not have the power to enforce its findings. In the whole field of transportation there are similar features which could be advantageously brought under central control without incurring the dangers of centralized management for all matters.

To effect railroad co-ordination of this character the following measures are proposed:

1. Compulsory federal incorporation of all interstate railroads.

2. Establishment of a general railroad organization embracing the agencies of central control and furnished with corporate powers for issuing securities, holding property, etc.

3. Creation of an executive board composed of railroad men to direct the central organization.

4. Appointment of a finance committee to manage central financing and to supervise the finances of the railroads of the country.

5. Division of the central organization into departments for carrying on the various branches of work, these departments to engage men of the highest ability and to be under the direction of the executive board.

6. Establishment of a federal railway board—a governmental body other than the Interstate Commerce Commission to which the executive board of railroad men and the finance committee shall be responsible and through which the government shall bear its share of responsibility for developing and maintaining efficient transportation.

7. Transference of the rate-regulating powers of the states to federal regional commissions, appeals to be made to the Interstate Commerce Commission on bills of exceptions.

8. Development of financial machinery to secure new capital on the basis of the increase in railroad credit resulting from the co-ordination of the railroads and the co-operation of the government in the work of maintaining railroad financial strength.[1]

[1] The first six of these points are taken up in detail in section III and the eighth in sections IV and V. The changes suggested under the seventh point have been fully discussed in the press, before the Joint Congressional Committee on Interstate Commerce, and elsewhere, and do not require additional treatment here.

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Railroad co-ordination on this plan would not involve an overturning of the present transportation organization, but would supplement it by an authorized general organization governing general policies. It is a system which would in the least degree change the present one, being in large part a recognition of existing agencies of centralization.

The danger of developing too centralized a system of governmental supervision would be avoided by the creation of the federal regional commissions. Local considerations and interests would thus be given due weight, but the conflicts and discriminations arising under the present dual system of federal and state control would be eliminated.

The danger, involved in centralized private control, of creating a colossal, irresponsible, railroad trust would be obviated by placing upon the agents of such private ownership definite and substantial responsibility of a public nature. The development of too huge and unwieldy an industrial machine would be prevented by the retention of the present operating units.

The underlying principle, then, of the plan proposed for securing effective railroad correlation is to increase the centralization of both government and private control, leaving to each its proper work: to the government, general supervision; to the agencies of private control, actual management and operation. Responsibility for the maintenance of railroad credit would be added to the government's power over railroad earnings; and private power over railroad finances would be made definitely responsible to the government and to the public for upholding honest administration, sound finance, and efficient operation. Government supervision and private management would be brought into co-operation and would bear common responsibilities, though each would be restricted to its own true function. This constitutes true railway nationalization.

III. ORGANIZATION

The consolidated powers for general administration once determined upon, whether broad or narrow in scope, should be intrusted to a definite and responsible organization. The chief features of

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a practical form for such an organization are here presented to suggest how the proposed plan could be put into operation. It goes without saying that the details given are merely tentative and would doubtless have to be greatly modified in the practical working out of the system.

1. The first requirement, as indicated on p. 545, is that there should be compulsory federal incorporation for all interstate railroads. This is a necessary preliminary, not only for creating the central organization, but also for simplifying the federal regulation of rates and securities. Provision should be made for mergers, consolidations, and changes in ownership either before, or subsequent to, federal incorporation and under the supervision of a federal railway board later to be mentioned.

2. After federal charters have been granted, a general corporation should be created for the purpose of giving the agencies of central administration definite legal embodiment, and of making possible the issuance of certain special types of securities by the nationalized railroad system. Such a corporation may, for convenience, be called the United States Railways' Corporation.

3. The executive power should be placed in a board of experienced railway managers, and logically would be best developed out of the existing Railway Executives' Advisory Committee. A practicable organization would be to have the executive board consist of fifteen members, serving five years and chosen by the railroads in elections conducted by the federal railway board. The ballot for each road would be cast by its secretary. The apportionment of representation upon this executive board should be worked out with care, due provision being made for members from short-line systems. This might be accomplished by having one member for about every 17,500 miles of line, and by assigning one vote for every 2,500 miles. A road approximating this mileage would be entitled to a vote. No mileage could be counted twice, and no company or companies comprising a single system would be permitted to split their votes, except when entitled to more than seven votes. In such cases the seven votes would be cast for one man, and those in excess of seven, for another. Shorter roads could secure votes by combining their mileages, but fractional amounts above 2,500 miles

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could not be so combined. The fifteen men securing the highest number of votes would be declared elected. Members would be eligible for re-election. With few exceptions, only railroad presidents should be selected for the executive board.

An active executive committee of the board should be composed of five men, one retiring annually. This committee should be chosen by the executive board with the approval of the federal railway board.

4. It would be desirable to have a general finance committee under the executive committee to handle technical questions relating to the marketing of new capital issues. This committee should consist of five members, three of whom should be bankers rather than railroad men, the other two being drawn from the executive board. The members of this committee should be selected by the federal railway board.

The duties would include giving professional advice as to when new securities should be sold and as to the type of those securities, establishing principles of sound finance for the railroads of the country to follow, and bearing a large measure of responsibility for maintaining railroad credit, especially in the matter of the proportion of bonded indebtedness to the equity in the property. The finance committee should consult with the engineers investigating the probable future requirements of commerce and should study the question of making provision for those requirements. The general financial responsibility borne by the executive board of the railways' corporation and the federal railway board would thus devolve in its technical phases upon this finance committee.

5. The functions of the United States Railways' Corporation in addition to the work of the executive board and finance committee may be assigned to four departments, as follows:

a) Department of equipment-supply and terminal operation: One of the chief purposes of a central railway organization would be to provide sufficient equipment for carrying the heaviest volume of traffic that can be foreseen. Under the present system individual roads cannot be expected to take as large a view of the car-supply question as a central agency would take, and owing to a declining scale of rates and to competition between the roads in the invest-

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ment market, the companies have not been able, acting separately, to accumulate sufficient car reserves. Cars are to the transportation of commodities what currency is to the transference of values, and just as decentralized responsibility was unable to overcome the difficulties in the way of securing a flexible currency, so it may be reasonably argued that only a central responsibility can overcome the difficulties in the way of securing an adequate reserve car supply.

This reserve supply, then, would be handled by the first department. As pressure of commerce increased, the reserve would be drawn upon and distributed to the points of heavy demand. For a road to have the privilege of drawing upon the car reserve it would be required to keep the amount and the condition of its own equipment up to standard, just as banks must have their loans in good condition if they are to avail themselves of the facilities for credit expansion under the federal reserve system.

A further duty of this department would be to introduce more efficient methods into the current and normal handling of equipment. Great savings may be made where traffic now moves by a long, roundabout route instead of by the short, direct one, and where it is forced through congested terminals instead of being diverted around such points. This will require the adoption of equipment-pooling in some degree. It is believed that the proper basis for just pooling arrangements would be to consider any traffic moving by an uneconomical route as a temporary vested interest of the road now handling that traffic. This vested interest should be recognized by paying the road from which the traffic is diverted a gradually declining percentage of the revenue received on that business over and above the estimated cost of transportation via the new route. The percentage should be a declining one for the reason that no vested interest based upon uneconomic methods ought to be permanent.

Finally, it would devolve upon the first department to operate terminals constructed or taken over by the United States Railways' Corporation.

b) Department of standards and methods: The second department would be responsible for establishing standards and methods

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to secure the most efficient railway operation. It would embrace the present associations of yardmasters, master-mechanics, maintenance engineers, car accountants, statisticians, etc. The work of the department could be expanded advantageously by the establishment of central laboratories and experiment plants. In its relation to the operating departments of the various roads customary principles of staff organization would govern.

c) Department of traffic, projection, and safety engineering: The third department would consist of engineers engaged in studying the questions of how to promote more efficient handling of traffic, where new terminals should be built, how existing terminals should be reconstructed, where new lines should be laid out, branch lines extended, and by what methods safety in transportation could be increased. This department therefore should be made up of engineers of the very greatest ability. It should be their whole aim to develop a perfectly co-ordinated national railway system.

d) Department of construction and maintenance: This department would have charge of construction work outlined by the projection engineers, determined upon by the executive board in conjunction with the finance committee, and approved by the federal railway board. It would likewise be the duty of this department to maintain all properties operated by the railways' corporation.

The chiefs and other officers and employees of the four departments would be selected by the executive board and would receive compensation from the railways' corporation.

6. Over this entire organization a federal railway board would have general power of supervision and control. This board would be the agent of the government in bearing the responsibility from the governmental side for the maintenance of railroad credit, for providing for the future needs of commerce, and for developing a scientifically co-ordinated and efficiently operated national railroad system. This board would have the duty of approving all railroad issues, whether of stocks, bonds, or notes, and of eliminating illegal, unsound, and unethical financial practices. Its approval would be required for the building of any new line or terminal, thus eliminating wasteful building of parallel routes and unsystematic terminals.

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The executive board of the corporation would be responsible to the federal railway board. The federal board should have the power to attend any executive or departmental meetings and to hold sessions of its own upon any questions which it deemed important. Petitions from sections of the country ill-provided with railroad facilities should be presented to the federal board. Furthermore, as this board would be responsible from the governmental side for maintaining railroad credit, it would be directly concerned with the adequacy of rates. Representations made by it to the Interstate Commerce Commission for rate advances would bear the very greatest weight. The public would feel assured that the rate advance was necessary; the Interstate Commerce Commission would be relieved of investigating the facts as to the general financial requirements of the railroads; and the railroads could be assured of the necessary rate advances before the destructive influence of inadequate earnings should block the channels of trade. Both opportunism as a public policy and irresponsibility as a prerogative of private financial power would be eliminated, and there would be substituted therefor efficient, constructive co-operation between the agents of private and governmental control.

The constitution of the federal railway board should be closely analogous to that of the Federal Reserve Board: it should consist of seven members, of whom six should be appointed by the President with the consent of the Senate, to serve ten years, and should not be residents of the same sections of the country. All should give their entire time to the business of the board and should receive salaries from the government. One of these members should be drawn from the Interstate Commerce Commission, two should be experienced in banking and finance, three should be experienced railroad men, the seventh member should be a governmental official, either the Secretary of Commerce, ex officio, or the incumbent of a newly created secretaryship of transportation. This board would in turn appoint the members of the finance committee, conduct the election of the members of the executive board, and approve the appointments to the executive committee of five.

In case of war or threat of war legislation should provide for an extension of the powers of the federal railway board, either upon

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the motion of the board itself with the approval of the President or at the direction of the President. These powers should include the actual direction of train movement so far as necessary, and also the right to inaugurate a system of government guaranty of railroad earnings during such time. Since this guaranty would be solely for war purposes, any expenditure by the government thereunder would be a military expense, and hence it should acquire no lien upon the railroad property. The federal railway board would thus become the direct agent of the government for mobilizing the transportation machinery of the country in the national defense. In this connection it may be pointed out that the national banking system was established in time of war and for war purposes, but was designed also to serve the credit needs of the country in times of peace. It is believed that, similarly, the thoroughgoing co-ordination of the railroads, while imperative because of the critical times the nation is passing through, is likewise essential to the work of economic reconstruction after the cessation of war.[1]

IV. THE RESERVE OF EQUITY

Creation of new equity in the railroad property is the fundamental requirement for strengthening railroad credit, since new funds for additions and betterments must, under sound financial management, be raised largely upon the basis of proprietary claims to equity in the property.

The organization of a railways' corporation along the lines suggested would strengthen railroad credit by increasing the equity in the property. The very act of aggregating a number of units, each with its own credit, will produce a total credit greater than the sum of the unit credits separately considered. A bank gathers the credit of the community together, buys it in the form of commercial paper, and produces a result greater than the sum of its purchases. Likewise, in the consolidation of industrial or railroad

[1] The emergency of war has called forth a policy of central railroad control which, so far as actual railroad operation is concerned, is similar to the plan presented here. Special attention is therefore directed to the financial machinery suggested in section V for making possible the continuance of co-ordinated management upon the basis of its proven efficiency.

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companies, the resulting merger has a credit greater than that of the constituent parts.

In the case of a United States Railways' Corporation this effect would arise from the confidence of the investing public that the organization, with its staff experts, would be able to introduce economies and to bring about the universal application of the soundest principles of finance and the highest standards of maintenance and operation. The prevention of the misuse of railroad credit, the pooling of railroad equipment, its mobilization at the points of greatest demand, the utilization of car shops to rush through equipment repairs, whether upon the property of one road or of another, the routing of freight by the shortest or least congested roads rather than by roundabout lines or through crowded terminals—it is in such direct ways as these that railroad net earnings would be increased even without rate advances, and a central reserve of equity and financing power would be built up. The indirect or cumulative effect would be still more important, for such increased financing power could be drawn upon to strengthen the transportation system at its weakest points, to finance the most needed extensions and improvements, and to inaugurate thereby greater efficiency of operation. Nothing can so increase financial stability as the prudent use of financial resources. This is the broad, constructive, and vital influence that the creation of the United States Railways' Corporation would exert, and it is in this respect that such a plan appears to be superior to the opportunistic method of rate advances, the dangerous experiment of government ownership, or the inadequate plans of government guaranty of earnings and an improved system of governmental rate regulation.

One practical feature alone justifies a careful consideration of the merits of establishing central railroad control, and that is the great benefit that would be derived from the general application of electrical power to transportation. This can be accomplished only if the capital strength of the roads is equal to the task.

V. FINANCIAL MACHINERY

Upon the character of the financial machinery provided would depend the practicability of a plan for establishing a central railway

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organization of such a type as to preserve the advantages of separate companies, each stimulated to successful management by the pressure of private interest.

In supplementing the credit of the individual companies by central financing power, the financial responsibility of the separate units must not be sacrificed. This may be accomplished by pooling a part, but not all, of the net earnings of the railroads. Some of the earnings would have to be deposited in a single reservoir so as to make possible the linking of the new financial strength of the central organization with the old financial strength of the existing companies. Securities based upon new or anticipated earnings could thus be issued, identical in their essential character with securities representing present earning power. Only in this way could the newly created equity be utilized in the attraction of capital. But the incentive to the maintenance of efficient organization in the individual roads must be preserved by having the earnings above a certain amount directly controlled by the individual company, and payable (subject to sound principles of finance) to the stockholders of that company.

These two ends—the establishment of central financing power and the continuation of the existing responsible financial units—could be accomplished in the following manner: The average annual dividends paid by each railroad company for a specified number of years past would be determined to establish the basis for dividend payment through the railways' corporation. This average would be altered to conform to special circumstances. If higher dividends than the calculated arithmetical average have been paid by the company in recent years, this fact may be recognized by producing an average in which the dividends for these recent years shall be weighted, provided they have been justified. If a policy of paying small dividends, notwithstanding large earnings, has been followed, such a policy, as hereafter to be shown, would not prejudice the interests of the stockholders. In case the earning power of a company is clearly insufficient to pay the calculated average dividends, an equity readjustment should be made prior to the association of the company with the railways' corporation, reducing the

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calculated average of dividends to an amount that could, in accordance with sound finance, actually be paid.

Stock certificates of the United States Railways' Corporation with a par value of one hundred dollars, and certificates of fractional par value as might be necessary, would be issued to the stockholders of the present companies in such amount that each stockholder would receive, upon the declaration of a 6 per cent dividend, his share of the total amount of dividends established for his company by the method outlined. The 6 per cent rate would be known as the "basic-dividend rate"; but the rate of dividends declared at any time would be subject to the decision of the executive board in conjunction with the federal railway board.

The present stockholders of the several companies would be recognized as the owners of the entire equity in the property of their respective companies. New stockholders would be admitted to the privileges possessed by the old. In addition to the certificate of the United States Railways' Corporation, each stockholder would receive an instrument certifying that he held a certain share of the proprietary interest in the property of the present company, and this proprietary certificate would also carry with it the right of voting for the directors and upon other matters in accordance with the by-laws of the individual corporation. These proprietary certificates should be without par value. They would give to the holders the right to receive dividends declared by the directors of the individual corporation out of earnings, in excess of operating and general expenses, taxes, rentals, interest, maintenance and depreciation, surplus requirements, and the amount payable to the United States Railways' Corporation for expenses, dividends, and surplus.

Each of the separate companies would be required to pay to the treasurer of the railways' corporation such an amount as would enable the corporation to meet its expenses and to distribute dividends upon its stock at the rate determined on for the year or quarter. Above such amount the earnings of the individual companies should be divided, 50 per cent being retained by the company itself, and 50 per cent being turned over to the railways'

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corporation, until an amount equal to 3 per cent on the United States Railways' Corporation stock (or such other rate as determined by the executive board and federal railway board) had been assigned to the railways' corporation, and the division would then cease. Out of the corporation's share there should first be taken a sum sufficient to make up the deficits for companies not returning the amount required of them. The remainder should not be paid out in dividends, but should be devoted solely to the legitimate uses of a surplus, such as building up contingent liability funds, working capital, or making improvements, additions, and betterments upon the property. The individual companies should similarly be required to build up surpluses before paying extra dividends to their proprietors.

If a company is unable to pay the amount required of it by the railways' corporation, the obligation should be cumulative; that is to say, the deficit would have to be met before any surplus division took place. If after a reasonable length of time such company is unable to pay off its deficit, the holdings of the proprietors of that company in the stock of the railways' corporation should be reduced sufficiently to enable the company to pay out of its earnings the amount required of it by the central corporation, as based upon the reduced stock holdings.

No roads now undergoing reorganization should be admitted to association with the railways' corporation until the work of reorganization should have been completed. After a fair estimate is made of the dividend-paying power of the road, temporary certificates would be given to the stockholders, exchangeable for the United States Railways' Corporation stock as soon as the dividend-paying power is demonstrated. Additional claims upon future earnings could be represented by adjustment stock also exchangeable for the railways' corporation stock progressively as the stable earning power of the road increases.

The railways' corporation should have the right to issue new stock from time to time based upon investment projects which would clearly, under conservative estimate, enable it to earn the dividend rate with proper surplus, or based upon improvements

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in methods of operation such as would enable the amounts paid by the individual companies to the central organization to be increased.

There would thus be the following major classes of stock: first, United States Railways' Corporation stock, Class A, based upon existing earning power of the individual companies; secondly, United States Railways' Corporation stock, Class B, based upon anticipated earnings due to the installation of more efficient methods, or the construction of new property, and convertible into Class A stock as its dividend-paying power is proved stable; thirdly, proprietary certificates of the individual companies, entitling the holders to extra dividends when declared by the company after proper provision for surplus and upon approval by the federal railway board. The proprietary certificates would carry the claim to the equity in the property in case of dissolution and would likewise carry the voting right.

It is believed that in this way great flexibility would be provided for in the treatment of the equity of each road. Any decrease would be met by a reduction in the holdings of corporation stock, and any increase, accomplished through conservative management or otherwise, would be reflected in an increase in the value of the proprietary certificates, or company stock.

The funds raised by the United States Railways' Corporation, whether through the accumulation of surplus or through the flotation of new capital issues, would be disbursed in one of three principal ways:

First, directly to existing companies for improvements, extensions, and new equipment. In such instances the funds of the railways' corporation should be used only in case the increased earnings of the individual road by virtue of the improvements would clearly pay a good return upon the capital invested. Any capital requirements above such amount should be provided out of the surplus of the individual company or by means of its own capital issues. With this arrangement the dividends on the increased stock of the general organization would be met through an increase in the contribution of the individual company to the general-earnings account. The improvements would belong to the

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road upon which they were made and would be included under mortgages containing "after acquired" clauses.

Second, to subordinate companies, organized for the operation of new terminal projects or line connections. The subsidiary corporation would own the property thus created and would meet its obligations to the railways' corporation out of its share of freight charges on the business handled. Likewise, special payments from railroad companies to which the terminal or line connection was of particular benefit would be justified, and also a general distibution of a part of the burden over the whole transportation system in proportion as the general efficiency and earning power of the whole system might be promoted.

Third, for property to be directly owned by the United States Railways' Corporation. This would be the wisest policy to adopt for the reserve supply of cars, central repair shops, and construction plants. Such property would be under the direction of the first department, and the interest or dividends upon the capital required would be met out of rentals collected from companies using the reserve equipment, and by means of a distribution over all the railroads of a share of the financial burden. Such a measure would be justified by the insurance which the reserve equipment would offer against shortage in time of heavy traffic pressure.

The general advantages of this financial machinery would be: (*a*) the preservation of the incentive for efficient management on the part of the individual companies, while at the same time empowering the central organization to finance the general requirements of the railroads, considered nationally; (*b*) the recognition of sound and progressive railroad management by offering a free channel for equity, from whatever source it may arise, to express itself in the value of the proprietary certificates, such certificates drawing dividends in accordance with the company's earnings and the policy of its management; and (*c*) the development of means for raising capital upon the new credit created through systematic railroad co-ordination.

This would be the logical treatment for the equity in the railroad property. With regard to the creditors' interest, there would be no need for disturbing existing mortgages, except in such cases

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of recent occurrence as might prove to have involved fraudulent or unsound transference of value. Other than this, all creditor instruments would remain precisely as at present. The issuance of bonds by the individual companies or by the railways' corporation would follow the usual procedure.

VI. SUMMARY OF ADVANTAGES

The essential principles of a constructive national railroad policy may be stated as follows:

1. The friction, discriminations, and conflicts of authority in the present system of governmental regulation must be eliminated. Governmental control must be simplified, and the requirements that are laid upon the railroads must be uniform and standardized throughout the whole country.

2. Of equal importance is the elimination of friction and conflicts among the railroads themselves. This can be accomplished only by a thoroughgoing co-ordination of the railroads, not only in their terminal and line connections, but also in equipment, operation, and financial management.

3. Another essential element of a national railroad policy is the concentration of managerial ability and responsibility to the public in the same men. This can best be done by placing upon the agents of private ownership a larger measure of authorized public responsibility than they bear at present.

4. Further, any changes that are made must be made strictly upon the basis of the existing organizations. Nationalization may be accomplished without sacrificing in any degree the advantages of private ownership.

5. Finally, flexibility and freedom of action must be preserved in the organization to enable the executive power to meet changing conditions and to adopt constructive measures in providing for the future needs of trade.

The responsible administrative centralization of the railways in the form of a United States Railways' Corporation would embody these principles. Private interest in sound and flexible railway management under the present companies would be preserved, a superorganization for the general direction of the railroads would

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be created, and there would be built up a central reserve of railway equity and financing power. This would assist in solving the problem of securing adequate facilities. All the interests of the stockholders and creditors would be safeguarded, the premature building of parallel routes would be rendered impossible, and the rights of communities that have suffered from unsound railroad financing would be recognized as equal to the rights of similarly situated communities that have prospered with the aid of providently managed railroads. The effective correlation of railroad administration would take into account the fact that the railway net is essentially a single system, clearing through the same terminals, drawing upon the same investing public, utilizing the same equipment, and having a claim upon the best methods of operation to raise the standards of efficiency and service. Railroad co-ordination would, above all, protect the right of the public to have in the transportation system a national instrument adequate to the needs of commerce.

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AUTOMOBILE INSURANCE RATES

In a discussion of the methods of automobile insurance rate-making it is essential to keep in mind that the measurement of risk in every branch of insurance has approached its present status by a series of improvements and that modern methods in personal and property insurance are a result of this progress. There is consequently no anomaly in the fact that in automobile insurance, one of the youngest branches of the business, a satisfactory system of rate-making still awaits development. The automobile was of comparatively slight importance prior to 1900; in the census of 1899 its manufacture was reported only as a part of the wagon and carriage industry.[1] Motor-car insurance was introduced in this country in the same year. In the early years of the business, furthermore, co-operation was rendered impossible by the competitive practices of many companies. Promiscuous rate-cutting was a prominent and disturbing feature of the business, and it was not until 1910 that the predecessor of the present association for rating liability and property damage risks was formed. Associated action as regards fire and theft rates appears to have been initiated only one year earlier.[2]

I. TWO FORMS OF AUTOMOBILE INSURANCE

Two practically distinct types of automobile insurance are written in the United States, one by casualty companies and the other by fire and marine insurance companies. The casualty companies issue "liability" policies, which indemnify the insured for his legal liability to others for their personal injuries; "property damage" policies, covering his liability for damage to the property of others; and "collision" insurance, compensating for any damage to the cars of the insured as a result of collision. The fire and marine companies' policies protect the insured against losses from fires,

[1] *United States Census*, 1910, Vol. X.

[2] *Investigations by the New York Insurance Department of the Automobile Underwriters' Conference and the Workmen's Compensation Service Bureau*, 1911 and 1913.

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explosion, lightning, land and marine transportation perils, and theft or robbery. Property damage and collision insurance are written by both types of companies, with most of the former business going to the liability companies and most of the latter to the fire companies. The collision insurance contract usually consists of an endorsement upon a liability or fire and theft policy. Complete automobile coverage in a single policy is made possible by the co-operation of companies.

II. ASSOCIATIONS EMPLOYED IN RATE-MAKING

The rates for liability and property damage insurance are now made by the National Workmen's Compensation Service Bureau, organized in 1910. Prior to this date they were made by the Liability Conference and by companies independently. The National Workmen's Compensation Service Bureau is an agency for the promulgation of all liability and compensation rates, a portion of its attention being devoted to the automobile business. Its statisticians collect and prepare the data for rate-making, and their conclusions are submitted to an "Automobile Committee." While no absolutely accurate statistics exist, it is probably a tolerably correct estimate that 85 per cent of the liability business is done by companies which adhere to Bureau rates.

For the purpose of rate-making the country is divided into eleven sections as follows: (1) Greater New York territory; (2) Chicago and St. Louis territory; (3) Boston territory; (4) Philadelphia territory; (5) Providence; (6) Baltimore, District of Columbia, and Pittsburgh; (7) Detroit, Indianapolis, and Milwaukee; (8) St. Paul and Minneapolis; (9) the states of Alabama, Kentucky, and Tennessee; (10) Arkansas, portions of various other states, and certain cities; and (11) Arizona and other states.

Other automobile insurance rates, including those for collision, fire, theft, and transportation coverage, are made by the associations affiliated with the National Automobile Underwriters' Conference. The jurisdictions of these sectional conferences are shown on the accompanying map (Fig. 1). The committee in charge of rates is composed of representatives from the sectional associations. This enables an adjustment to local conditions, which

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competition has rendered of prime necessity in the past, but which is detrimental to uniformity.

III. LIABILITY, PROPERTY DAMAGE, AND COLLISION RATES

Automobiles have been divided for purposes of rate-making into four groups: private pleasure cars, public vehicles, commercial motors, and manufacturers' and dealers' cars. The term "private

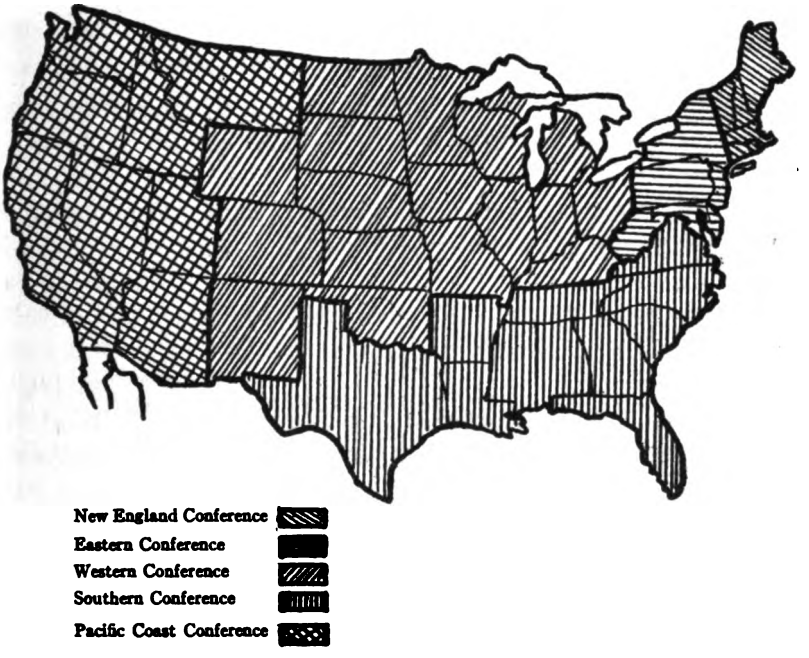

FIG. 1

pleasure car" is not exact, since it has been found advisable to include in this group cars used for professional and other work—for example, doctors' motors. Public motor cars include livery vehicles, taxicabs, sightseeing cars, and cars of the private pleasure type constantly or occasionally used for livery purposes or rented. Commercial vehicles are those used for the transportation of goods or merchandise—another definition which has been difficult of interpretation. Manufacturers' and dealers' cars comprise those driven primarily for demonstrating or testing purposes from factories,

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sales agencies, garages, and stations. A distinction is also made between gasoline- and electric-driven cars. Space does not permit of a description of the rating methods employed for each of these classes of vehicles, and attention is confined to private pleasure cars because of their greater number, wider distribution of ownership, and consequent greater importance in rating problems.[1]

A. LIABILITY AND PROPERTY DAMAGE RATES

These forms of insurance have had common bases for rate-making and may be considered together. The factors which were assumed to be of consequence in the establishment of rates and capable of measurement are (1) motive power, (2) the territory in which the car is used, and (3) horse-power.

1. *Motive power.*—Electric vehicles have always enjoyed lower rates than gasoline cars and no distinction in rates on the former has been made because of horse-power, premiums being charged on a straight per-car basis. There seems to be no reason to criticize this discrimination between gasoline and electric cars or the per-car method of rating the electric type. Electric cars are usually capable of only a very ordinary rate of speed, are generally more conservatively driven, and are used extensively for social purposes. The probability of frequent and severe accidents therefore is considerably lower than for the gasoline-driven type. Table I gives a

TABLE I

Horse-power	Public Liability Insurance		Property Damage Insurance	
	Gasoline	Electric	Gasoline	Electric
16	$22.50	.....	$ 5.65	.....
40	66.50	$17.50	16.65	$4.40
60	86.50	.....	21.65	.....

comparison of the range of rates on gasoline and electric vehicles in Chicago and St. Louis. Whether a correct premium ratio exists between these two classes of cars is an unanswerable question

[1] For a popular description of rating methods for liability, property damage, and collision insurance on public, commercial, and manufacturers' cars, see the author's articles in *Motor Age*, March 23, 30, April 6, 1916.

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because of lack of data. An appreciation of the statistical situation with reference to gasoline cars will make apparent the difficulty of arriving at equitable rates on electrics, for these are far less numerous and yield a more limited exposure.

2. *Territory.*—Rates have always been based upon the locality in which the car is principally used. The various rate territories have previously been indicated, and for the purpose of illustrating the influence of location on rates of premium a few jurisdictions will suffice. Table II shows the rates[1] in different localities on a 40-horse-power gasoline car. Two principal considerations have

TABLE II

	Liability	Property Damage
Greater New York	$83.50	$20.90
Chicago and St. Louis	66.50	16.65
Providence	54.50	17.25
Boston	54.50	13.65
Philadelphia	46.50	16.65
Baltimore and Pittsburgh	46.50	15.15
Arizona	44.75	11.20

brought about a territorial influence on rates: the great differences in traffic conditions in various cities and rural districts, affecting the probability of injury to persons and property, and in some instances the greater damages recoverable.

3. *Horse-power.*—The third factor in liability and property damage rating is the insurable horse-power, computed by the formula of the Society of Automobile Engineers, the premium rate increasing with the insurable horse-power. The latter may differ considerably from the advertised or actual horse-power of the car. Chicago being used for illustration, Table III shows the liability and property damage rates rising with the horse-power of the car.

B. CRITICISMS OF RATING METHODS

Within recent years considerable criticism of the rate-making methods employed has developed, directed against all three of the

[1] Rates change frequently, of course, and it is impossible to tell how long the illustrations used will be current.

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fundamental factors upon which liability and property damage rates are based.

TABLE III

Horse-power	Liability	Property Damage
16	$22.50	$ 5.65
20	34.50	8.65
25	46.50	11.65
30	56.50	14.15
35	61.50	15.40
40	66.50	16.65
50	76.50	19.15
60 and over	86.50	21.65

1. *Motive power.*—Because of their relatively small number little attention has been given to rates on electric cars, and the problem of differentiation in premiums between these and gasoline cars has never attained any prominence. The principal question is whether sufficient experience records are available to support the rates which have been promulgated. No one denies that the electric-motor rates should be less than those for gasoline cars, as shown in the figures cited, but the proper extent of difference is disputable. The rate schedules indicate that the electric-car rates are roughly about 25 per cent of those on 40-horse-power gasoline cars in Greater New York. With the least attempt at refinement of analysis, however, the available statistics are inadequate, as far as can be ascertained; rates have in the past been made largely on the basis of underwriting judgment.

2. *Territory.*—As stated, rates have varied in accordance with the locality in which the machine was principally used. Thus the recent public liability rate in Greater New York territory on a 40-horse-power car was $17.00 higher than on the same car in Chicago, and the property damage rate in the former territory exceeded that in the latter by $4.25. It is undoubtedly true that by reason of traffic conditions the average hazard in New York is greater than in Chicago, but it may also be said that it is doubtful if the data available are of sufficient scope to determine the extent to which New York rates should exceed Chicago rates. The owner of an automobile in New York may admit that he should

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pay a higher rate than the owner of a similar car in Chicago, but deny that he should be charged as much as $17.00 extra. Thus far the companies have not been in a position to refute his denial by the production of statistical proof of the relative extent of hazard in the two localities. In brief, the problem of fixing rates in insurance involves the statistical problem of accumulating sufficient experience to produce dependable averages. The present extent to which this has been accomplished may be judged by the fluctuations in Chicago rates; the public liability rate on a 40-horse-power car appears to have been $86.00 in December, 1913, and to have successively declined to $73.50 in the early part of 1915 and to $66.50 later in the same year.[1] It is conceivable, but not probable, that this decrease is partly attributable to a reduction in expense; the greater likelihood is that a considerable margin of safety was allowed during the infancy of the business and that later experience justified a decrease.

The making of rates on the basis of the locality in which the car is supposed to be principally used has resulted in some very peculiar situations. There will be found instances of two persons living in close proximity on opposite sides of the imaginary line bounding a rate zone. One very fortunately lives just outside the higher-rate zone, while the other unfortunately lives just inside this zone. As a concrete illustration an owner of a 30-horse-power car in Port Chester, New York, would pay $50.50 for public liability insurance, while an owner fortunate enough to live at Greenwich, Connecticut, four or five miles farther from New York City than Port Chester, would obtain a rate of $37.25.[2] As a result of such a system of rate-making the owners of motor cars who found themselves just inside the higher rate-zone line have always been dissatisfied. Some allowance in rates is justifiable, nevertheless, for cars operated in suburban or rural territory, and, no matter where the imaginary zone boundary line is drawn, persons located just within it will strenuously complain. Some territorial grouping

[1] See the rate schedules of 1913 and 1915 and the *New York Journal of Commerce*, August 18, 1915.

[2] Connecticut is said to have enjoyed at one time a rate even lower than the one quoted.

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must continue to exist and individual injustices must be ignored so that substantial equity may be done. It would seem desirable, however, that some method be devised of reducing the extent of such discrimination.

3. *Horse-power.*—Insurable horse-power as a factor influencing rates has probably received greater criticism than either the motive power or the territorial distinctions, and with less justification. The most powerful and, in fact, conclusive criticism, were it true, is that potential horse-power is valueless as an index of the probability of injuring persons or damaging property because of the legal limitation of speed. Thus almost any private pleasure car can attain a speed of 30 miles per hour and greater speeds are almost universally prohibited by law, which, it is argued, places practically all cars upon an equal basis. Two methods of refuting this contention may be employed, however. In the first place, the mere existence of a law regulating speed is no assurance of its enforcement. Secondly, probably the most satisfactory statistics for automobile rate-making are those which justify the horse-power basis. The accompanying diagram[1] (Fig. 2) gives a picture of the liability and property damage experience on groups of cars of varying horse-power; the regularity and correlation of the curves are to be noted, as well as the rising loss cost with the increase in horse-power.

Another adverse criticism of the horse-power rating-basis is that high-power cars are usually also expensive cars and, as such, are on the average more carefully driven, among other reasons, because of the employment of professional chauffeurs. While there is some difference of opinion on this matter it is frankly admitted by those interested in automobile rates that it would be desirable to have some method of making allowance for competent operation, but the practical difficulties involved appear to be insuperable. A car is driven, not only by the chauffeur employed, but also by the owner, his family, relatives, and even friends. It is impossible to devise any satisfactory system of rating drivers, for, even assuming that a personal-rating system was operative, the insurance might

[1] The figures from which these curves were constructed are purposely omitted, having been given confidentially.

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be procured by one person and the driving performed by another, or fraud readily practiced by means of assumed names.

Thirdly, it is indicated that a very important element is omitted from the bases for rates, namely, the distance the car is run. Assuredly, the greater the mileage covered by a car, the greater the possibility of accident, and the higher the rate should be. This is

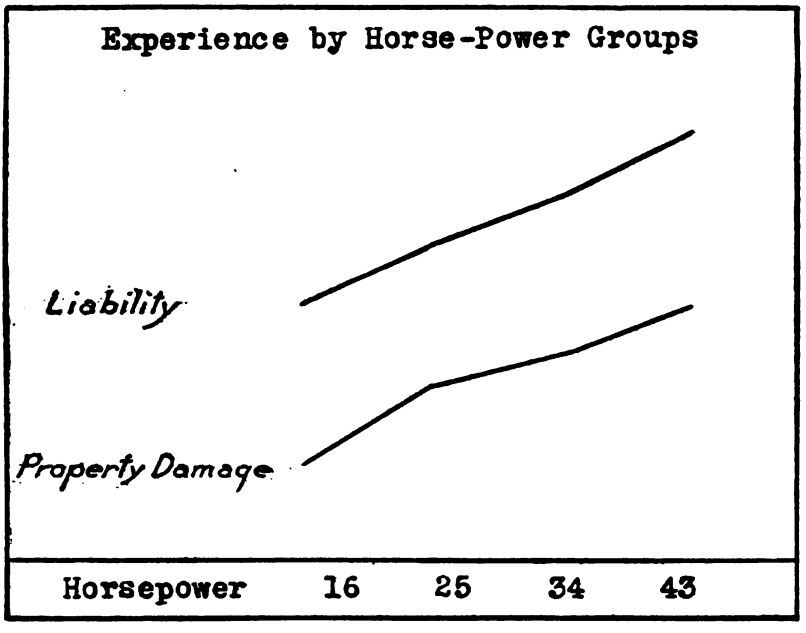

FIG. 2

generally acknowledged as a correct contention, but affords another illustration of the practical difficulties encountered in automobile insurance rate-making. Instances of falsifying speedometer records as an assistance in tire claims are not unknown, and until a mechanism which cannot be tampered with or destroyed is invented the influence of mileage will remain incalculable.

Lastly, it is to be noted that the insurable horse-power used as a basis for rating is derived from the formula of the Society of Automobile Engineers, which takes account only of bore and of number of cylinders. Because of differences in length of stroke and

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type of motor this formula is far from being an accurate measure in every case of the actual power of an engine. Two illustrations will be sufficient to demonstrate this. The Ford $360 car and Hupmobile $1,185 car are both four-cylinder motors with a 3¾-inch bore and both have the same horse-power rating. The former, however, has a 4-inch stroke as compared with a 5½-inch stroke for the latter. This fact necessarily makes some difference in actual horse-power. The manufacturers of the Hudson claim to have increased the power 80 per cent over the former engine without any increase in size in a car known as the "Super-six." Both cars, however, have the same horse-power rating.

C. COLLISION INSURANCE

In collision insurance, which indemnifies for damage to a car by collision with other objects, the contract usually takes the form of a clause indorsed upon a liability or a fire and theft policy. Two types of indorsements are in use: the "Twenty-five Dollars Deductible Coverage" and "Full Coverage" clauses. The latter places no limit upon the company's liability, while under the former the insured must himself bear $25 of any loss.[1] Because of the predominance of small losses and questionable claims the "Full Coverage" contract is considerably more expensive. In the same collision premium class (A) full coverage costs $63.00 as compared with $28.00 for deductible coverage. The former is thus almost prohibitive.

1. *Basis of rates.*—Collision insurance rates on private pleasure cars are based upon the list price of the car. According to its list price the car is placed in one of a number of classes lettered from A to Z, the former representing the lowest list-price class. Rates for all territories are the same and for deductible coverage range from $28.00 to $200.00. This system presupposes that the extent of damage from collision is likely to vary with the expensiveness of the car. For example, the scraping of the poor finish on the side of a cheap car would be negligible, while it would detract considerably from the value of a costly, highly finished machine.

[1] Another variety exists similar in principle to the "memorandum" clause in marine insurance.

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2. *Criticism.*—The principal criticism of the collision rate system is that the list-price basis causes the higher-priced cars to pay excessive rates. It is argued that these cars usually have their hazard considerably reduced by the fact that they are ordinarily better driven and have less hard usage. This brings up again the problem of rating drivers, with all its practical impossibilities. Another defect is that no consideration is given to the variation in the accident rate with different localities.

IV. FIRE AND THEFT INSURANCE

A. DEFINITION

Insurance on motor cars written by fire and marine insurance companies provides indemnity for losses incurred from fire, explosion, lightning, land and marine transportation perils, and theft. Collision insurance is also furnished by these companies by the indorsement of a collision clause.

B. RATE BASES

1. *Territory.*—For purposes of rate-making the country is under the jurisdiction of a number of conferences which are members of the national conference. Their territories were previously shown. Largely because of local conditions, including competition and the failure to combine experience, the rates for the various conferences are not uniform. Thus on the same type of car the rate for "non-valued" fire, theft, and transportation coverage in Chicago is $3.50, on the Pacific Coast $2.25, and in Eastern and New England Conference territory $2.50 for each hundred dollars of insurance. The fire and theft rate on similar cars in Virginia is $3.00 and in other Southern territory $3.25. Texas and Mississippi are virtually exempt from Conference authority because of the existence of anti-compact legislation.

2. *List price.*—Cars are grouped according to list price in lettered classes, Class E including cars listed at $799 and under; Class D, cars listed at from $800 to $1,399; and thus to Class A, comprising cars at $3,500 and over. Class E rates are the highest, $5.00 for this year's model in Chicago territory; Class D, $3.50; Class C, $3.00; Class B, $1.75; Class A, $1.50. Class D cars will be used

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for purposes of illustration here. The list-price basis has been employed on the assumption that the more valuable the car the better the care taken of it, the smaller the moral hazard, and the more insignificant the danger of theft. The comparatively great theft loss on common cars of low price, which can be readily disposed of with few questions asked, is too well known to require more than mention.

3. *Model.*—The rates quoted above are all on cars of this and next year's model; the older the car, the higher the rate. Thus cars of this year's model are rated at $3.50 in Chicago, last year's models at $4.00, and those older than three years at $5.75. In addition, the amount of insurance on cars more than six months old is limited. In Chicago Class D cars from six to eighteen months old are not insured for more than 60 per cent of the original list price, and models three years old and more for not more than 30 per cent of the list price. The following assumptions underlie this method: (1) the physical hazard is affected by the price of the car because the cheaper the car, the poorer the construction; (2) on cheaper cars an unintentional moral hazard is created by lack of care; and (3) the value of the automobile is supposed to be an index of the financial condition of the owner. The restriction as to the amount of insurance on cars of other than the present model is imperative because of the peculiarly rapid depreciation on automobiles. A car is said to lose 25 per cent of its value as soon as it leaves the salesroom, and within a few years it may not be worth one-third of its original cost. The underwriters must necessarily guard against insuring for a greater sum than a car would bring second hand; otherwise a moral hazard would be created.

4. *New and second-hand cars.*—The remarks just preceding apply also to the distinction made in rates between new and second-hand cars. On a Class D car of this year's model insured within six months of time of purchase by the original owner the rate in Chicago is $3.50, while a person acquiring the car from the original owner would, under similar circumstances, be charged $3.60.

5. The companies differentiate between electric and gasoline cars. Thus on the Class D gasoline car just mentioned the rate was $3.50, while similar insurance would be given on an electric vehicle for $1.00.

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C. CRITICISM OF RATES

The criticism of fire and theft rates, briefly stated, is on grounds of the lack of statistical support and consequent inability on the part of the public to ascertain whether the rates are just and equitable or exorbitant and discriminating. In 1911 an investigator of the New York Insurance Department stated: "As yet the Conference has gathered no statistics, nor does there appear to be a clearly defined plan as to the nature of the statistics to be gathered or the methods to be employed in gathering them. Such rates as were originally adopted and the changes that were subsequently made in them appear to be based rather upon 'underwriting judgment' than upon actual figures obtained from the different companies writing this class of business." In 1917 a similar report[1] stated that "none of these rates were based upon statistics gathered for the purpose, although the experience of individual companies was used. And there are no records or statistics in the files of the conference which would indicate whether these rates were equitable or just."

It is not necessarily to be inferred that the described deficiencies in rating have been brought about by design. In nearly every form of insurance a beginning had been made with a rough grouping such as is evident in automobile rating, and in some cases with a much cruder system. The complaint which the public may justly urge with the greatest force is the lack of co-operation which has existed among the companies in the past. More or less unrestrained competition not only made combined experience difficult to obtain, but frequently caused the published rates to be merely nominal. The defects of the system are obvious, and until some constructive, rather than critical, ideas are advanced little improvement can be expected.

V. PROPOSED MODIFICATIONS IN AUTOMOBILE RATE-MAKING

It is evident from what has been said that two modifications in the methods which have been employed in making rates are desirable, the first involving the statistical problem of accumulating and handling experience data, and the second consisting of an improved

[1] *Reports on Examinations of the Automobile Underwriters' Conference, New York Insurance Department*, 1911 and 1917.

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theoretical basis for rate-making. Steps are now being taken to improve the statistical basis for rates, but the solution of the second problem is progressing slowly, if at all.

A. PLANS FOR THE COLLECTION OF EXPERIENCE

A large volume of dependable data being a necessity, the statisticians of the National Workmen's Compensation Service Bureau have prepared a method for the collection and reporting of experience by its member companies under standard rules of procedure, a call to be made for this material in the early part of 1919. Variations in methods of compilation have hitherto created difficulties, even in dealing with what data were obtainable. Under the proposed system, which goes into effect for the policy year 1917, all experience data are to be based upon the year of issue of the policy, regardless of the time of receipt of the premium or the payment of loss. Because of the fact that some policies are not written until the latter part of 1917, it will be necessary to wait until December, 1918, before turning in all 1917 experience. Even then there will be outstanding losses to be considered, for liability suits sometimes require considerable time for adjustment or decision. The companies may adopt any method they see fit in compiling the information required, but reports to the Bureau must be in accordance with the prescribed plan.

Difficulty has been experienced because of the methods followed by some companies in treating insurance for a fraction of a year. The new plan provides a unit of a "car year" and requires that insurance for less than twelve months be reported as a corresponding fraction of a car year. Thus one car insured for six months would be reported as five-tenths of a car in liability and property damage insurance. In collision insurance risks of less than one year are to be reported as fractions of the list price; thus one month's insurance on a $1,200 car would be reported as $100 of insurance. It was deemed best in collision insurance not to attempt to collect two kinds of exposure—list price and number of cars—and the latter is consequently made optional with the companies, although advised by the Bureau.

Under this plan it will be necessary for the members to furnish the Bureau with the exposure, premiums, and losses, together with

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such a description of the risk as will enable segregation of the data according to (1) form of coverage, whether liability, property damage, or collision insurance; (2) type of car, whether private pleasure, private pleasure occasionally commercial, commercial, livery, public other than livery, manufacturers' and dealers' on named-chauffeur or specified-car basis, or manufacturers' and dealers' on pay-roll basis;[1] (3) motive power, whether gasoline, steam, or electric; and (4) classification of the car according to horse-power groups in liability and property damage insurance, and according to list-price groups in collision insurance.

Experience for the country as a whole is to be reported so as to permit of complete analysis as reported above. In addition it is necessary to require that data be reported by individual states and territorial divisions to permit adjustments of rates with reference to the relative hazard of the different rate groups. Inasmuch as the detailed analysis of experience proposed for the country as a whole would, in the case of a single state, reduce the exposure below the volume necessary for an average, it is planned to collect data by territorial groups in accordance with only the first three subdivisions named (form of coverage, type of car, and motive power), omitting classification of cars within the type.

It would then be possible to construct a system of rate-making similar to the differential plan employed in compensation insurance[2] or the method followed in the fire insurance "Experience Grading and Rating" schedule.[3] Under this plan it is assumed that any relations which may be developed from an analysis of national experience as regards, for instance, horse-power groups or list-price groups will hold true also for individual states, cities, and territorial rate groups, it being impossible to derive such relations from the territorially classified data because such data will not provide a sufficient exposure under each group. Thus if national experience shows that liability rates on cars of from 31 to 40 horse-power should be 2 per cent higher than rates on the 21- to 30-horse-power group, it may be assumed that this ratio is also equitable within any particular

[1] It will be noted that the classifications of type of car have been increased from four to six.

[2] See C. E. Scattergood, *Synthesis of Rates for Workmen's Compensation.*

[3] E. G. Richards, *Experience Grading and Rating Schedule*, New York, 1915.

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territory. Probably in each particular rate group the number of insured 31- to 40- and 21- to 40-horse-power cars would be found insufficient for a dependable average. Likewise it will be assumed that if, from the individual territorial groups' experience, it can be determined that private pleasure cars in Greater New York should be charged more than the same cars in Chicago, this will hold true of all cars, regardless of their horse-power. This is merely an application of the statistical principle that no average should be based upon insufficient data.

A code has been prepared to enable the companies, if they desire, to make use of punched cards in connection with the Hollerith or Powers sorting and tabulating machines.

The plan for collecting uniform liability, property damage, and collision insurance experience having been described, little space need be devoted to the National Automobile Underwriters' Conference plan for fire and theft insurance, which is very similar. Insurance written and losses are to be reported, with details as to location of the risk, by states or cities; type of coverage, whether fire, theft, transportation, or a combination of these coverages, and whether written on a valued or non-valued form; year of model, whether next year's, this year's, last year's, etc.; make of car; list-price class; motive power; ownership, whether new or second-hand; use of car, whether private pleasure, livery, etc.; presence of safety appliances, etc. With this information available it would be possible to proceed to construct fire and theft rates in accordance with the principles described under the liability, property damage, and collision plan.

B. SUGGESTED CHANGES IN LIABILITY AND PROPERTY DAMAGE RATING

It is a difficult matter to propose changes in existing rate-making methods which meet practical conditions, but the attempt may be made with the hope that the inevitable criticisms will themselves be productive of improvements. It will appear to anyone from a study of automobile rates that modifications are desirable which would produce (1) a reduction of discriminations, which are unavoidable under the present territorial divisions, (2) a consideration of certain admitted factors of hazard, which at present have no influence on rates, and (3) a system of equitably allocating expenses.

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1. The defect of the present system of rating is that at the boundary line of the state or other territorial division the rates change much more abruptly than hazards. The same trouble, for example, would ensue in the parcel-post system if a flat rate existed outside of the local zone, or in the express-rate system if the blocks were too few in number. One method of reducing the inequity of such abrupt transitions in automobile insurance would be to increase greatly the number of rate zones without reducing, below a point sufficient for an average, the exposure upon which rates are based. It is believed that this might be done without such fatal result and without enormously increasing the necessary number of rate schedules by the following method:

Every large city in the United States of over 55,000 inhabitants should be considered as the center of a series of rate zones, the city itself (approximately) forming the highest of these zones. It would then be necessary to obtain a basis rate for liability and property damage insurance for each of these cities—a rate which would cover merely the losses incurred, or, in other words, provide the amount actually returned to policy-holders. Such a rate is obtainable by comparing the ratio of losses to exposure on all private pleasure cars in the *particular city* with the ratio of losses to exposure over the *entire United States*. The particular city's rates would then be in proportion to the average rate of the United States as its loss ratio is to the average loss ratio of the United States. Thus, to use figures, if the Greater New York liability loss is on the average $40.00 per car insured twelve months, while the average loss in the United States is $30.00 per-car year, the rates in New York will be 133 per cent of the average rates of the United States.

It would seem from this that it would be necessary to construct a vast number of rate schedules in order to cover all the large cities in the United States. Two facts operate, however, to reduce the apparent magnitude of the task. First, the number of cities of over 55,000 inhabitants in the United States is only about 100, according to the 1910 census. Secondly, while it may be necessary for a time to carry nearly 100 schedules, this number may be considerably reduced if a reasonable coincidence of experience is discovered among these cities, which will permit of grouping. Grouping may also be necessary where insufficient exposure is found.

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There still remain to be considered the cities of less than 55,000 inhabitants. These are so numerous and the possible exposure in each is so small that the construction of separate rate schedules for them is impossible. Consequently they will be grouped in a class, and a rate made for the class in the same manner that a rate was arrived at for the larger cities. This will not do absolute justice among such smaller cities and towns, inasmuch as a city of 50,000 will obtain a rate equally low with a town of 5,000, but it will be 100 per cent superior to the present system, under which a city of 100,000 and one of 5,000 frequently find themselves on equal terms.

We have now to consider the territory outside of cities, including suburban and rural districts. It is proposed that each of the cities be considered as surrounded by a series of concentric circles, with the geographic center of the city as a common center, the circumferences of the circles being considered as the boundary lines of rate zones. Thus, using New York as an illustration, the greater part of the city would be circumscribed by a line, say, 25 miles distant at all points from the city's geographical center and forming a circle 50 miles in diameter. All cars within this zone would take the Greater New York rates, which will vary of course with the horse-power. Outside of it would appear another imaginary circle with a diameter of, say, 55 miles, and all cars between the circumference of this circle and the one first mentioned would take a rate which would be a percentage of the rate for the city zone and lower than the latter by, say, 5 per cent. It may be assumed with some degree of equity that, beyond a certain point, the farther a car is kept from the city, the less it will be used within the city limits. The loss experience of a number of larger cities might be used to determine upon a statistical basis what the percentages of the various zones should be, and their diameters. There would be many cases in which the location of the automobile would fall within two zones of different cities, and under such circumstances the higher rate of the two would be charged.

Such a system of adjusting rates to location would have the following points in its favor:

a) The assumptions upon which it is based may be more readily defended upon theoretical grounds, admitting of some explanation to the insured of the causes of rate differences.

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b) It would lessen the effect of discriminations which inevitably result from the present territorial divisions, such as a distance of a half-mile causing a $5.00 difference in property damage rates or a $23.00 difference in liability rates.

c) It would eliminate the anomaly of cities with 5,000 and 100,000 inhabitants having the same rates.

2. Some consideration should be given to certain factors of hazard which now have no influence on rates, such as (1) mileage covered and (2) competent driving. We reach the general conclusion regarding these factors, however, that a number of desired results in rate-making are unattainable or are not worth the trouble involved.

3. Finally, some method of accurately ascertaining the expense involved in connection with all forms of automobile insurance is necessary. The public is entitled to know that each line of coverage is bearing its equitable portion of the total cost of doing business. Considerable criticism of the percentage of premiums devoted to expenses exists and has even led to the establishment of so-called automobile mutuals. A more fundamental inquiry, however, is whether automobile insurance is being charged with more than its share of total expenses, and whether liability and property damage insurance are each bearing their appropriate portions of the expense burden. This question has already been discussed by an able writer on casualty insurance,[1] who has proposed an efficient cost system for companies writing multiple lines. His plan is described for the benefit of those companies "transacting multiple lines of insurance which desire . . . . enlightenment and guidance to ascertain as close an approximation as possible to the true cost of conducting *each* of its lines." This expense problem appears to be second in importance only to the improvement in methods of ascertaining pure premiums in automobile insurance.

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[1] C. E. Scattergood, "Cost Accounting in Casualty Insurance," *Proceedings of Casualty Actuarial and Statistical Society*, Vol. II, Part II, No. 5.

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MEDICAL BENEFITS UNDER WORKMEN'S COMPENSATION. I

Perhaps in no one branch of legislation have efforts toward uniformity been so persistent and at the same time so futile as in workmen's compensation. From the very first, even long before any acts had been passed, during the stage of preliminary study by commissions many conferences were held,[1] and at present an organization of governmental institutions created to administer the laws[2] offers a convenient medium for comparison of differences. In addition, many private organizations of attorneys[3] of labor, of social reformers,[4] of employers,[5] and of political parties[6] have formulated comprehensive standards for such uniformity—all differing widely of course in accordance with the particular views and interests represented. Nevertheless actual legislation enacted is of such bewildering variety that hope for uniformity seems farther removed now than it was seven years ago.

This variety makes the study of this (as well as many another) branch of legislation extremely difficult, and for this reason alone it may appear to the student as an unmitigated evil. Yet it is a trite observation that legislation is not enacted for the convenience of the student of law and economics. If everybody could only agree as to the proper standards of legislation, every deviation from

[1] See Atlantic City Conference on Workmen's Compensation, July 29–31, 1909; *Proceedings of the Third National Conference on Workmen's Compensation for Industrial Accidents*, Chicago, June 10, 1910; *Proceedings of Conference of Commissions on Compensation for Industrial Accidents*, Chicago, November 10–12, 1910.

[2] National Association of Workmen's Compensation Boards, organized in 1914.

[3] Conference of Commissioners on Uniform State Laws, 1913.

[4] *Standards of Workmen's Compensation Laws*. By the American Association for Labor Legislation, 1914.

[5] Tentative draft; memorandum of suggestions upon main provisions requisite to an adequate compulsory Workmen's Compensation Law. Issued by the National Civic Federation, December 1, 1914. National Association of Manufacturers Fifteenth Annual Convention, New York, May 16–18, 1910.

[6] *Standards of Workmen's Compensation*. Prepared for the Committee on Social and Industrial Justice of the Progressive National Service, New York, 1915.

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such standards might be readily characterized as an error. But no such agreement exists at present. The existing variety at least offers an opportunity for free experimentation, and if the assumption be justified that the goodness of the good law (as well as the badness of the bad law) may be demonstrated in its application, the variety offers an opportunity for comparisons the effect of which should be a wholesome tendency toward improvement of all the acts. The law enacted in New Jersey in 1911 and, notwithstanding many amendments, practically unchanged since then, has perhaps more than any other been supported as the "best act," the one that particularly satisfied all parties concerned. More than any other act it has influenced subsequent legislation, perhaps because it is the oldest of them. As a matter of fact, however, it is probably the least generous and, with one or two exceptions, the least just.[1]

If the essential purpose of a compensation law is not to relieve courts, nor to prevent waste of insurance premiums, nor to establish peace between capital and labor, but to do what its official designation indicates, namely, to compensate the injured workman or his dependents, then it evidently follows that the crucial point by which a compensation law is to be judged is the degree in which it succeeds in accomplishing this purpose. The law must be tested by its compensation scale.

Unfortunately, for various reasons, other features of the act have caused most discussion—constitutional and legal features, especially during the earlier stages of the compensation movement when the constitutionality of compensation was seriously disputed. Later the inevitably higher cost of compensation as compared with the old employers' liability (though not nearly so much higher as was assumed) created the movement for state insurance for the purpose of reducing the cost through elimination of profits, elimination of the selling cost, or even through a substantial subsidy from the public treasury to the cost of conducting the insurance business. Depending upon the views of the critics, the Washington law or the New Jersey law was declared to be the best or the worst law in the

[1] See *Three Years under the New Jersey Workmen's Compensation Law.* Published by the American Association for Labor Legislation, 1915. See also *American Labor Legislation Review*, V, No. 1.

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country, because one established compulsory state insurance and the other left an entirely free field to the enterprise of private insurers, though, as a matter of fact, both acts are grossly inadequate in the provision they make for the injured employee.

The constitutional, administrative, and insurance features of the various compensation acts are far from being settled. Nevertheless the time has come for a careful study of the essential, organic provisions of the acts, as their effects upon the economic status of the working class are beginning to be felt.

In a recent comprehensive study of "The Field of Workmen's Compensation in the United States"[1] Professor Willard C. Fisher properly emphasizes the greater importance of adequacy as compared with uniformity of these laws. It is evident, however, that, barring differences of verbiage or administrative details, absence of uniformity necessarily presupposes absence of adequacy in some acts, since it may be safely assumed that definitely excessive standards, as compared with the economic loss sustained, can hardly be expected. "It is obvious," says Professor Fisher, "that something like uniformity of scope, uniform adequacy of scope, is more important than any uniformity of awards, more important for the employer, for the employed, and for any who may be affected through these." In support of this view Professor Fisher quotes the incontravertible consideration that "while it is far from being a matter of indifference to an injured workman or his widow whether an award was at $10 a week, or at $13.33, still to have at least the $10, rather than nothing, or nothing but a right of action against an employer, is the great advantage."

The argument, while true, has its limitations. Evidently the difference between the adequate and the actual amount may be so great that it becomes a matter of very great importance. In the case of one western state, for instance, the compensation act came very near being adopted with a provision placing a maximum limitation of $7.20 a week, which would be a matter of grave concern to a permanently crippled employee with a large family.

In comparison with "nothing" even $7.20 a week may appear a competence. But the value of a "right of action against the

[1] *American Economic Review*, V, No. 2 (June, 1915), pp. 221–78.

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employer" was very much more than nothing in most states, except possibly Pennsylvania. The writer need not be suspected of any desire to make a defense of the discredited and almost universally abandoned system of employers' liability. But practical insurance men know that the "right of action" had and still has a substantial value, quite irrespective of the purely legal aspects of the claim of employers' negligence. The tendency of the academic student to grow enthusiastic over a compensation act as such, irrespective of its provisions, is of itself commendable because of the great importance of the underlying principle. Nevertheless there would have been a more critical attitude toward the compensation laws if the actual working out of the employers' liability laws through the medium of liability insurance had been better known to the laity. The effective statement so often made that under liability only one out of ten accidents was compensated, while under compensation each one received adequate compensation, would have lost a good deal of its force if it were more generally known that as a matter of fact the proportion of compensated cases to the total number of accidents reported is surprisingly equal under liability and under most compensation acts with a two weeks' waiting period, namely about 20 to 25 per cent. The fact is that the despised "right to action," always present, had a market value of its own, because of the necessary cost of litigating the action in court and also because of the ever-present chance of a larger or smaller verdict. In consequence, only a very small proportion of cases ever reached the court, but in most cases where the injury was at all grave and the common law liability had been modified by statutory enactments, the claims were settled by the sale, as it were, of that right of action to the insurance company for some substantial consideration. It is because of this, because of the comparison between two amounts, that there was so much opposition to compensation laws among workmen, and that even now efforts are not infrequent, on the part of the injured employee or his legal representative, to find a loophole in the compensation act and to bring the case into court under common law liability. From the point of view of the injured workmen the judgment of the essential fairness of our compensation legislation is largely based upon adequacy of reward.

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Again, there is another consideration of even greater importance to the student of social legislation: faults of "inadequacy of scope" (meaning failure to bring certain groups of wageworkers under the law) can be very easily corrected. As already stated elsewhere by the writer:

> Many years of study of the history of compensation systems in various European countries have convinced me that faults of limitation are very much less than an unsatisfactory scale. In fact, the history of compensation in Europe gives many examples of a gradual extension of the compensation principle from a few industries to many, until the entire industrial field is covered; but the scale of compensation once established is likely to be very much more rigid, and instances of a thorough reorganization of the scale in Europe are very few. Nor is it at all difficult to understand the reason for this difference. Various forces combine in a movement for a change from the liability to the compensation principle. It is not only the workmen but their employers as well who sooner or later begin to feel the drawbacks of the liability system. Moreover, in so far as the employing interests may offer any resistance to compensation legislation on account of its costliness, it may be easier to overcome one industrial group after another; and a good deal may be said from the point of view of expediency for a gradual introduction of the compensation system. But, just as evidently, no other class but the workers themselves could have any interest in the increase of a compensation scale, and the entire employing class will obstinately resist any such increase. As to disinterested public opinion, it is almost impossible to get its support as strongly in favor of a change in the law as it was in favor of its introduction.[1]

American experience, brief as it is, seems to offer contradictory evidence, but the contradiction is apparent rather than real. It is true that for the short period of this history the revisions of acts have been frequent and many, and that in some cases the compensation scales have been affected. But, after all, notwithstanding all the many changes, only in one case, that of Massachusetts, was the scale of benefits radically raised, increasing the cost of compensation according to various actuarial estimates from 40 to 50 per cent.[2] On the other hand, the number of legislative proposals for the increase of benefits which are introduced annually and buried in committee is enormous.

[1] "Accident Compensation for Federal Employees," *American Labor Legislation Review*, XI, No. 1 (March, 1912), p. 34.

[2] See *Second Annual Report of Massachusetts Industrial Accident Board, 1913-1914*, pp. 72–85.

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In this study it is intended to make a critical comparison of the various details of compensation scales, to trace any existing tendencies which may manifest themselves, to compare the different scales of the numerous acts passed and in force with the standards of compensation announced by various official and semiofficial public bodies, to determine, if possible, the effect of these scales upon the economic status of the injured wageworkers and their families, in so far as any evidence concerning it has been accumulated, and perhaps to work out a basic standard inductively. The problem of adequate medical aid is selected as the first subject for consideration.

Except in cases resulting in immediate death (and these are comparatively few—in industry as a whole less than 1 per cent)[1] the occurrence of each and every industrial injury calls for a certain amount of medical and surgical aid. This would seem to be quite evident to everyone except the adherents of Christian Science doctrine, and even they believe in treatment, though of a spiritualized nature. Perhaps in no other feature of compensation legislation are all the interests concerned in such substantial harmony. The injured man wants his life saved, or his pain relieved, permanent results or complications prevented, and his recovery accelerated. In every one of these objects the employer and the insurer are directly interested, because they all tend to reduce the economic loss sustained and therefore the cost of compensation—barring such exceptional cases as that of a dangerously injured workman without dependents whose death may cost less than the lifelong support of an invalid. Surely society at large is interested in promoting everything that can stimulate recovery and restitution of productive powers; for compensation may be placed on the income side of the ledger from the point of view of the workman, but from a broad social point of view it does not by one iota reduce the economic loss occasioned by the accident. Furthermore, from the point of view of insurance, the justice of furnishing such medical and surgical aid is specially evident. Insurance aims to make good a loss sustained. There may be some question as to actual loss

[1] See I. M. Rubinow, *A Standard Accident Table as a Basis for Compensation Rates*, p. 17. The Spectator Co., 1915.

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sustained because of the loss of wages. Wages, after all, are not a certainty. But if, as a result of an accidental injury, the workman is forced to pay out his few hard-earned dollars in physicians' or hospital fees, surely for this expense complete restitution should be made.

European precedents are largely in favor of such liberal treatment with regard to medical aid. The compensation movement in the United States was inaugurated by several practical investigations and analytic studies of European legislation.[1] In the latest international compendium of compensation legislation published by the United States Bureau of Labor Statistics (*Bulletin 126*, "Workmen's Compensation Acts of the United States and Foreign Countries") forty-one acts altogether are enumerated and analyzed, and of these twenty-two refer to continental Europe, fourteen to the United Kingdom and British Colonies, three to Spanish-American jurisdictions, and one to Japan. Disregarding the last four recent and comparatively unimportant acts, a comparison between British and European standards is significant. Of the fifteen British acts thirteen entirely disregard medical benefits; two (those of New Zealand and West Australia) allow it up to the generous amount of £1 or $4.87. British legislation has absolutely failed to grasp the true significance of the compensation theory. The situation on the Continent of Europe is entirely different, as the following summary will indicate (the acts of Bulgaria and Montenegro are omitted as indefinite and unimportant):

Austria	For 20 weeks	Netherlands	Unlimited
Belgium	For 26 weeks	Norway	Unlimited (after four weeks)
Denmark	None	Portugal	Unlimited
Finland	None	Roumania	For 2 weeks
France	Unlimited	Russia	For 13 weeks
Germany	Unlimited	Servia	Unlimited
Greece	Unlimited	Spain	Unlimited
Hungary	Unlimited	Sweden	None
Italy	First aid only	Switzerland	Unlimited
Lichtenstein	Unlimited		
Luxemburg	Unlimited		

[1] See F. C. Schwedtman and J. A. Emery, *Accident Prevention and Relief* (investigation on behalf of the National Association of Manufacturers); Frankel and Dawson, *Workingmen's Insurance in Europe* (on behalf of the Russell Sage Foundation); the *Twenty-fourth Annual Report of the U. S. Commissioner of Labor* on "Workingmen's Insurance and Compensation Systems in Europe"; and others.

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Out of twenty acts, only three fail to grant medical aid, one grants first medical aid only, in three the limits are sufficiently high to leave out a very small proportion of cases, and twelve offer all the medical aid that is required. It is true that in several of these countries most[1] or all[2] of the medical aid is furnished by the sickness-insurance funds, in which the injured holds compulsory membership, but, after all, the essential feature is that the supply of necessary medical aid is guaranteed.

In view of these considerations liberal provisions for adequate medical and surgical aid might be expected with gratifying uniformity in the various American acts. As a matter of fact the direct opposite is true. The limitations placed upon this form of compensation are many, as Table I will demonstrate.

The essential limitations are those of the length of time during which medical aid[3] must be given and also the money limit placed upon its cost in each individual case. There are other limitations and qualifications dealing with the scope of what might properly be classified under medical and surgical aid, but these are reserved for subsequent discussion at length.

Taking the acts passed up to the end of 1916 and in force at present, the essential provisions of the compensation acts as to medical and surgical aid are given in Table I.

The evidence of lack of uniformity is conclusive, the existing variety of provision quite bewildering. Certain types or degrees of liberality in providing medical aid may, however, be ascertained, and these types can be brought out better by arranging the laws in force (omitting the earlier and superseded laws) in line according to the amount of medical aid furnished.

In view of the existence of two different limits, the money and the time limit, even such an arrangement offers some difficulties. Which offers more to the seriously injured workmen: Wisconsin, which grants medical aid for 90 days irrespective of its cost,

[1] Germany, Hungary, Luxemburg, Norway.

[2] Austria, Russia.

[3] For purposes of brevity the term "medical aid" will be used when medical and surgical aid, hospitals, drugs, etc., are meant. The importance of "etc." will be considered at greater length presently.

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TABLE I

State or Territory	Date of Enactment of Law	Date in Effect	Time Limit for Medical Aid	Money Limit for Medical Aid
Alaska	April 29, 1915	July 28, 1915	No medical aid	
Arizona	June 8, 1912	September 1912	No medical aid, except cost of last sickness in fatal cases	
California	April 8, 1911	September 1, 1911	90 days	$100
California	May 26, 1913	January 1, 1914	90 days	No limit
California	May 8, 1915	August 8, 1915	No limit*	No limit
Canal Zone	March 20, 1914	April 1, 1914	No limit	No limit
Colorado	April 10, 1915	August 1, 1915	30 days	$100
Connecticut	May 29, 1913	January 1, 1914	30 days	No limit
Connecticut	May 20, 1915	May 20, 1915	No limit	No limit
Hawaii	April 28, 1915	July 1, 1915	14 days	$50
Illinois	June 10, 1911	May 1, 1912	56 days	$200
Indiana	March 8, 1915	September 1, 1915	30 days	No limit
Iowa	April 18, 1913	July 1, 1914	14 days	$100
Kansas	May 14, 1911	January 1, 1912	No medical aid except cost of last sickness in fatal cases	
Kentucky	March 4, 1914	Declared unconstitutional	No limit	$100
Kentucky	March 23, 1916	August 1, 1916	90 days	$100
Louisiana	June 18, 1914	January 1, 1915	14 days	$100
Maine	April 1, 1915	January 1, 1916	14 days	$30†
Maryland	April 16, 1914	November 1, 1914	No limit	$150
Massachusetts	July 28, 1911	July 1, 1912	14 days	No limit
Massachusetts	June 25, 1914	October 1, 1914	14 days‡	No limit
Michigan	March 20, 1912	September 1, 1912	21 days	No limit
Minnesota	April 24, 1913	October 1, 1913	90 days	$200§
Montana	March 8, 1915	July 1, 1915	14 days	$50
Nebraska	April 21, 1913	November 17, 1914	21 days	$200
Nevada	March 24, 1911	July 1, 1911	No medical aid, except cost of last sickness in fatal cases	
Nevada	March 15, 1913	July 1, 1913		
Nevada	1915	July 1, 1915	120 days	No limit
New Hampshire	April 15, 1911	January 1, 1912	No medical aid, except cost of last sickness in fatal cases	
New Jersey	April 4, 1911	July 4, 1911	14 days	$100
New Jersey	April 1, 1913	April 1, 1913	14 days	$50
New York	December 16, 1913	July 1, 1914	60 days	No limit
Ohio	January 15, 1911	January 1, 1912	No limit	$200
Ohio	March 14, 1913	January 1, 1914	No limit	$200
Oklahoma	March 22, 1915	September 1, 1915	15 days	No limit
Oregon	February 15, 1913	July 1, 1913	No limit	$250
Pennsylvania	June 2, 1915	January 1, 1916	14 days	$25–75**
Porto Rico	April 13, 1916	July 1, 1916	56 days	No limit
Rhode Island	April 29, 1912	October 1, 1912	14 days	No limit
Texas	April 16, 1913	September 1, 1913	7 days	No limit
Vermont	April 1, 1915	July 1, 1915	14 days	$75
Washington	March 14, 1911	October 1, 1911	No medical aid	
West Virginia	February 22, 1913	October 1, 1913	No limit	$150
West Virginia	February 20, 1915	May 21, 1915	No limit	$150–$300¶
Wisconsin	May 3, 1911	May 3, 1911	90 days	No limit
Wyoming	February 27, 1915	April 1, 1915	No medical aid	
United States	May 30, 1908	August 1, 1908	No medical aid	
United States	September 7, 1916	September 7, 1916	No limit	No limit

* "Within 90 days thereafter, unless such time is extended by the commission" (sec. 15a).

† "Unless in case of major operations being required" (sec. 10), when larger sum may be allowed by the commission.

‡ "And in unusual cases, in the discretion of the board, for a longer period" (sec. 5., amended sec. 1, chap. 708, Act of 1914).

§ " . . . . the court may upon necessity being shown therefor . . . . require the employer to furnish such additional medical, surgical, and hospital treatment and supplies during said period of ninety (90) days as may be reasonable, which together with any such sums or relief theretofore furnished shall not exceed in all two hundred dollars ($200) in value."

¶ " . . . . shall not exceed twenty-five dollars, unless a major surgical operation shall be necessary; in which case the cost shall not exceed seventy-five dollars" (sec. 306e).

** " . . . . in case an injured employee has sustained a permanent disability and it is the opinion of the Commissioner that the percentum of such disability can be reduced or made negligible by surgical or medical treatment, the amount expended for medical, surgical, and hospital treatment may be, but shall not exceed three hundred dollars in any case" (sec. 18 as amended by chap. 209, 1915).

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or Oregon, which offers $250 worth of the doctor's work irrespective of the time it may take to absorb this fee?

Evidently no absolute, universally applicable rule can be formulated. Much depends upon the case and, one is tempted to add, upon the doctor. Where a difficult operation is required and an expert specialist must be called in, the $250 limit may be reached in one day. On the other hand, a lingering illness may require moderately priced medical aid given at intervals for a long time. It seems reasonable to assume, perhaps somewhat arbitrarily, that time limits will have a stricter limiting effect (and are therefore less desirable from the injured worker's point of view, though perhaps not from the physician's point of view) than money limits.

Accepting this hypothesis, therefore, the arrangement of the acts according to the amount of medical aid furnished is as shown in Table II.

Incredible as it may seem, there are no cases where more than two states grant exactly the same amount of medical aid, and the agreement of two state laws is very rare; according to Table II it is to be found only in the cases of Iowa and Louisiana (14 days and not over $100) and Montana and New Jersey (14 days and not over $50). As a matter of fact, even this slight degree of uniformity vanishes at a closer examination of the act. In Louisiana the period covered is "the first two weeks after the injury" and in Iowa it is "any time after an injury and until the expiration of two weeks of incapacity," which is materially fairer. The Montana provision differs from that for New Jersey by specifically authorizing the so-called hospital contracts (of which more later) in lieu of the medical benefit. The cost of this hospital contract is usually in part or in whole assessed against the wageworkers.

It would have been helpful if the arrangement of the various state acts according to the degree of liberality in granting medical aid, as given in the Table II, had brought out some tendencies evident upon simple inspection, but unfortunately this is not the case. For example, there are six states in which state compensation insurance has been established to the practical exclusion of stock insurance companies: Nevada, Ohio, Oregon, Washington,

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West Virginia, and Wyoming.[1] In addition, stock companies are excluded from operating under the compensation law in the Canal

TABLE II

Time Limit	Money Limit	State	Act of
None	None	Canal Zone	1914
None	None	United States	1916
None	None	Connecticut	1915
None*	None	California	1915
None†	None	Massachusetts	1914
None	$250	Oregon	1913
None	150–300	West Virginia	1915
None	200	Ohio	1911
None	150	Maryland	1914
120 days	No limit	Nevada	1915
90 days	No limit	Wisconsin	1911
90 days	$200	Minnesota	1915
90 days	100	Kentucky	1916
60 days	No limit	New York	1914
56 days	No limit	Porto Rico	1916
56 days	$200	Illinois	1911
30 days	No limit	Indiana	1915
30 days	$100	Colorado	1915
21 days	No limit	Michigan	1912
21 days	$200	Nebraska	1913
15 days	No limit	Oklahoma	1914
14 days	No limit	Rhode Island	1912
14 days	$100	Iowa	1913
14 days	100	Louisiana	1914
14 days	75	Vermont	1915
14 days	50	Montana	1915
14 days	50	New Jersey	1913
14 days	50	Hawaii	1915
14 days	30	Maine	1915
14 days	25	Pennsylvania	1915
7 days	No limit	Texas	1913
No medical aid except cost of last sickness		Arizona	1912
		Kansas	1911
		New Hampshire	1911
No provision for medical aid at all		Alaska	1915
		Washington	1911
		Wyoming	1915

* See note (*), Table I.
† See note (†), Table I.

Zone, in Alaska, and under the United States Employees' Compensation act. What influence did that have upon the medical aid provision? Ohio, Oregon, and West Virginia are far at the

[1] As a matter of fact, in some of them, notably Ohio and West Virginia, stock companies were until recently enabled to compete indirectly with the state fund.

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head of the list with medical aid unlimited in time, and with limits of $200, $250, and $300, but, on the other hand, Alaska, Washington, and Wyoming do not grant any medical aid at all, and this was also true of the systems provided for the employees of the United States government, until the act of 1916 was substituted for that of 1908.

Does the East or the Far West better recognize the necessity of thorough medical aid? Connecticut and California head the list, Washington and New Hampshire are its tail end. The six New England states are scattered throughout the list, and so are the states constituting other geographical zones of this country. Can any effect of the general degree of industrial development be recognized? It is perhaps significant that no industrially important state has entirely excluded medical aid, as Arizona, Kansas, New Hampshire, and Washington have done, but outside of that there is no uniformity between industrial Connecticut and Massachusetts at the head of the list, and industrial New Jersey and Pennsylvania very near the bottom.

Perhaps the only basis for generalizations is that of the year in which the act was passed. The year indicated in the last table is not always the original year of the enactment of a compensation law by the state, nor is it the year of the latest amendment, but it is the year of the act which established the standards of medical aid that still persist. It is significant, therefore, that of the first ten acts in the list only two date back to 1911 (Ohio and Wisconsin), while of the eight acts excluding medical aid altogether, or practically so, one was passed in 1908 (United States), four in 1911 (Kansas, Nevada, New Hampshire, Washington), and one in 1912 (Arizona). There are exceptions even to this rule: the early acts of Ohio and Wisconsin on the one hand, and the late acts of Montana, Maine, Pennsylvania, and Wyoming on the other; nevertheless this comparison seems to offer a better understanding of the problem. Outside of this element of time, the various provisions of the laws appear simply as capricious vagaries of thousands of ignorant legislators, not at all amenable to any law of social causation.

It is interesting, therefore, to trace the gradual evolution of the provisions for thorough medical aid in the history of the

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American compensation movement. The total failure to appreciate the importance of it and to provide for it even in the slightest degree during the preliminary stages of enquiry and investigation is striking, especially in view of the fact that the movement for accident compensation started in this country only after some twenty years of European experience was available. The earliest experiment was the Maryland act of 1902.[1] No mention of the problem of medical aid for the injured is made in that act; and the same is true of the United States act of May 30, 1908, and the Montana act of 1909. When the states of New York, Minnesota, and Wisconsin appointed commissions for the investigation of the entire problem, the compensation movement for the first time acquired national importance. But in the discussion of the basic principles of the equity and constitutionality of the compensation idea, the problems of proper medical treatment of the injured were disregarded.

It may seem unreasonable to find fault with this; it may be argued that that early period was not at all adapted to the discussion of such details. And yet one might have expected that in the severe indictment of the employers' liability system such as every one of the early reports contains, and among the specific charges of insufficient compensation, wastefulness of the insurance premium, slowness of adjustment, and breeding of antagonism between employer and employee,[2] the failure of many injured to receive proper medical and surgical aid, the uncorrected fractures, the stiffened joints, the unprevented infections, and the inability to substitute a cork leg for the lost bone-and-flesh one might have been emphasized. Unfortunately no one outside of the medical profession was aware of these conditions, and the medical profession lacked the understanding of the social aspects of this problem.[3]

[1] See *Bulletin of the United States Bureau of Labor*, No. 45, p. 406, for the text of the act; *Bulletin No. 57*, p. 645, for an account of its operation.

[2] Report to the legislature of the state of New York by the Commission appointed, under chap. 518 of the Laws of 1909, to inquire into the question of employers' liability and other matters. *First Report*, Albany, 1910, p. 19.

[3] A noteworthy exception, which deserves to be recorded, is Dr. M. O. Lorenz's Compensation scheme, published during the period under consideration, which was faulty in many other respects, but did propose "in case of incapacity full medical aid"

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We find, therefore, that the first national conference on compensation held in Atlantic City in the summer of 1909[1] failed even to mention the subject of medical aid. At that conference only the most general aspects, such as the "desirability, practicability, and constitutionality" of compensation were discussed. But from such generalities discussion rapidly turned to specific provisions. Nevertheless neither the second conference, in Washington (January 20, 1910),[2] nor the third, in Chicago (June 10–11, 1910), showed any greater appreciation of this problem. The Chicago conference even began the detailed consideration of a "Workmen's Compensation Code"[3] brought in by H. V. Mercer, chairman of the Minnesota Commission, but this code did not so much as mention medical aid, though several long sections were devoted to administrative details. The first general consideration of medical aid took place at the special Conference of Commissions held again in Chicago in November, 1910, at the request of the Massachusetts Commission, which was actively engaged in preparation of a bill for the consideration of the next session of the legislature of that state. At this meeting as many as eight state commissions, one federal commission, and one federal bureau were represented.[4]

Thirteen specific questions were submitted for painstaking discussion, but the question of medical aid was not one of them. It was injected, almost unexpectedly, into the discussion of "Question 6, the length of the waiting period," by Mr. George M. Gillette, member of the Minnesota Commission, who suggested that the labor representatives at the conference consider "a proposition of

("What Form of Workingmen's Accident Insurance Should Our States Adopt?" *Proceedings of the American Association for Labor Legislation*, Second Annual Meeting, 1909, p. 74). Dr. Lorenz's opinion remained a voice in the wilderness as far as practical legislation was concerned, except possibly in Wisconsin.

[1] See Atlantic City Conference on Workmen's Compensation, July 29–31, 1909.

[2] *Proceedings of the Third National Conference on Workmen's Compensation for Industrial Accidents*, Chicago, June 10, 1910 (brief report of the second national conference, held in Washington, January 20, 1910, printed as an appendix).

[3] *Ibid.*, pp. 40–43.

[4] *Proceedings of Conference of Commissions on Compensation for Industrial Accidents*, Chicago, November 10, 11, 12, 1910. Boston, 1910.

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changing the waiting period from two to three weeks and, in lieu of that, furnishing hospital and medical attendance, and see what would be best." "To the average man," said Mr. Gillette, "that means a very great deal," and also it "is for the interest of the employer to see that that man from the very start of his injury has the very best sort of hospital care and surgical attendance. Otherwise, very serious consequences might flow from the ill care of injury." The brief discussion which ensued after this suggestion is worth reproducing in part as a very significant illustration of the character of our social legislation a few years ago:

MR. GILLETTE: If we could do both, if we could have two weeks and also give the surgical and medical attendance, I would like to see it done, but I don't believe we can do it within any reasonable limits. . . . .

CHAIRMAN (MR. MERCER): It would seem to me, after my experience in Europe, that it might be a business proposition from the employer's standpoint, to take care of the hospital bills and the doctor's bills during the first two weeks free of charge. I think he would make money out of it in the end.

MR. GILLETTE: But it is all an element of cost.

MR. GOLDEN (a labor representative): I believe, if any person gets injured, two weeks is long enough for us to wait for pay, and the very least the employer can do is to pay hospital and medical bills, whatever might be used on the man. Three weeks is too long . . . . they ought to receive hospital bills and medicine, and whatever stuff they need while they are sick the first two weeks, free of charge.[1]

Some progress had evidently been made in the United States in standards of labor legislation between 1910 and 1917, if in 1910 representatives of labor only dared to ask for medical aid during the two weeks' waiting period, while eight of the acts in force at present grant medical aid without any time limit and without any money limits.

In view of the modest demand put forth by Mr. Golden, representing labor, the Chicago conference went as far as it could have been expected to, by providing the following answer to question 6:

Length of waiting period? Two weeks, during which period employer shall furnish medical treatment or hospital care to an amount not exceeding $100 in value.[2]

[1] *Op. cit.*, p. 100.

[2] *Bulletin of the United States Bureau of Labor*, No. 90, September, 1910, p. 716.

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In view of this lack of appreciation of the great importance of medical aid, the failure of the many early acts to provide for it adequately or at all need not appear strange. In the numerous reports of the state investigating commissions, which appeared at rapid intervals during the last few years, very little attention was paid to the question. But, amazing as it may seem, in several of them, even the more recent ones, there is not even the slightest reference to, or even mention of, the problem.[1] No reference at all is found in the purely optional Massachusetts act of 1909, which remained a dead letter, the similarly ineffective optional New York act of 1910, or the compulsory New York act of the same year (the Wainwright act), which was soon declared unconstitutional.

The avalanche of compensation acts began in 1911, ten acts having been passed in that year; of these, five went into effect during the same year, three on January 1, and two at later dates of the following year. The medical provision made by most of these acts on the whole was very meager.

Washington	None
Kansas, Nevada, New Hampshire	Only if injured employee dies, leaving no dependents
New Jersey	2 weeks, not over $100
Massachusetts	2 weeks
Illinois	8 weeks, not over $300
California	90 days, not over $100
Wisconsin	90 days
Ohio	Not over $200

Only four of the ten acts went beyond the standards outlined by the Chicago conference; two accepted them without much change, and four provided practically no medical aid at all, only four making provision that was more or less adequate. The situation fully deserves the scathing criticism of contemporary expert students. "Particularly unfortunate," says Dr. E. H. Downey, "is the consistent failure to provide adequate medical care for the injured—a type of benefit which probably yields larger returns, in proportion

[1] See *Colorado Report of Employees' Compensation Commission*, 1913; *Illinois Report of the Industrial Insurance Commission*, 1907; Iowa Employers' Liability Commission, 1912; *Louisiana Employers' Liability Commission Report*, 1914; *Maryland Employers' Liability and Workmen's Compensation Report*, 1913, etc.

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to its cost, than any other form of accident relief."[1] And again, Dr. D. D. Lescohier, in the report of the Minnesota Bureau of Labor Industries and Commerce: "It is questionable if any American law, unless that of Wisconsin, furnishes medical relief to injured workmen. . . . . It is questionable if the Wisconsin law should not be amended to read that medical aid should continue until recovery was complete or as complete as would ever be probable."[2]

In at least one state, namely Washington, the matter was not settled without a serious struggle. The commission which prepared the draft of the compensation act (or at least some members of it, representing the interests of labor) recognized the importance of medical benefits in the scheme of compensation. But the exaggerated fear of the excessive burden which that might place upon the employer forced the commission to evolve an original plan of meeting this need. Sections 10 and 11 of the draft presented by the commission to the legislature proposed the organization of a First Aid Fund,[3] to which a contribution of "four cents for each day's work or fraction thereof done by each workman" would be made by each employer, one half of this amount to be deducted from the wages of this employee. From this First Aid Fund the sum of $5 per week was to be paid for a period not exceeding three weeks to meet the cost of medical, surgical, and hospital service. The language of the proposal did not make clear whether the first aid was to be limited to accidental injuries, or was to include all other diseases as well, but since the amount of payment was based upon the customary hospital fee of $1 per month, the presumption is that all illness was included. Nor was the meaning of the "three weeks" limitation quite definite, though probably the limitation referred to each individual case of sickness.

The authors of compensation legislation in the state of Washington have repeatedly expressed their pride in the courage with which that state embarked upon this novel and untried field of

[1] E. H. Downey, *History of Work Accident Indemnity in Iowa*, 1912, p. 145.

[2] *Thirteenth Biennial Report of the Minnesota Bureau of Labor, Industries, and Commerce, 1911–1912*, Part I, "Workmen's Compensation," by D. D. Lescohier and A. A. Garrison, p. 14.

[3] See John H. Wallace, "Compulsory State Insurance from the Workman's Viewpoint," *American Labor Legislation Review*, XI (November 1, February, 1912), 19.

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social legislation, while the effete East was wavering and debating and investigating. In view of twenty-five to thirty years' experience in Europe, these references to the experimental character of compensation legislation do sound somewhat odd. How many gross errors some judicious investigation could have prevented is amply demonstrated by this First Aid Fund plan. In Massachusetts, where medical aid for two weeks without limit of cost was given from July 1, 1912, to October 1, 1914, the average cost per $100 of pay-roll amounted to some 8½ cents. Even assuming an average wage of $1,000 (a preposterous assumption of course), the annual cost amounts to some 85 cents per wageworker. Yet in order to grant the petty amount of $15 (utterly inadequate, because satisfactory medical aid and hospital service cannot be purchased for $5 per week, especially in case of surgical conditions), it was intended to collect $12 per annum for each worker and charge half of it to the worker's wages. No wonder that opposition to this plan developed on both sides. "It was opposed," says Mr. Wallace, "through fear that state supervision of hospital treatment would result in the upbuilding of a political machine for administration and in the location of state-built hospitals . . . . it was opposed because it was argued that this was a daring piece of social legislation [*sic!*] and would be sufficiently cumbrous for the first two years of its experimentation without the burden of the first-aid feature and the close supervision and weekly payment of bills required." For these and other reasons the First Aid Fund feature was eliminated; and, be it further noted, after four years of experience compensation in Washington still lacks its medical benefit.[1]

The even year 1912 was an off year in legislative work. Only three acts were added to the list—those of Arizona, Michigan, and Rhode Island—and only one of these failed to make provision for medical aid. Of the other two, Rhode Island followed the Massachusetts standard in this as in almost all other provisions of the compensation system, while Michigan went a step beyond the conference standards by extending the medical benefit to three weeks.

A large number of compensation acts were passed in 1913. Disregarding amendments of older acts, and even the passing of

[1] See note at end of article.

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entirely new acts in states already having some compensation act on their statute books (as in California, Ohio, and Wisconsin), eight states were added to the lists. The progress of the movement for adequate medical benefits is evidenced by the fact that not a single one of these eight acts waived medical benefits entirely. The provisions made were as follows, in an ascending scale:

Texas	1 week, No money limit
Iowa	2 weeks, $100 limit
Nebraska	3 weeks, $200 limit
Connecticut	30 days, No money limit
New York	60 days, No money limit
Minnesota	90 days, $100 limit
West Virginia	No time limit, $150 limit
Oregon	No time limit, $250 limit

Again, in 1914, only three new acts were passed, those of Kentucky, Louisiana, and Maryland, of which the first was declared unconstitutional.[1] Considering that all three are southern states, in which standards of social legislation are characteristically lower (of the sixteen states still remaining after January 1, 1917, outside of the domain of compensation legislation, twelve are to be found among the eighteen southern states), it is doubly significant that only Louisiana preserved the Chicago conference standard of two weeks with a $100 limit, while the Kentucky act (later declared unconstitutional) offered medical aid up to the cost of $100 and Maryland provided for aid up to $150 without any time limit.

In 1915 ten more states and territories fell into line: Alaska, Colorado, Hawaii, Indiana, Maine, Montana, Oklahoma, Pennsylvania, Vermont, and Wyoming.

Alaska	No medical aid
Wyoming	No medical aid
Pennsylvania	14 days and $25 ($75) limit
Maine	14 days and $30 limit
Hawaii	14 days and $50 limit
Montana	14 days and $50 limit
Vermont	14 days and $75 limit
Oklahoma	15 days and no limit
Colorado	30 days and $100 limit
Indiana	30 days and no limit

[1] In addition compensation was established for the government servants in the Canal Zone by presidential decree.

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Here our hypothesis, so strongly supported by the development up to 1914, seems to break down: without any exceptions the *new* acts passed in 1915 have skimped in the matter of medical aid, and most of them went below the lower limits of earlier legislation. While it is a matter of some satisfaction that only two acts, and those of industrially insignificant states like Alaska or Wyoming, failed to provide for medical aid altogether, none of the others went beyond 30 days, and as a matter of fact only two so far have done so; the other five states followed the New Jersey standard in the matter of time limits, and most of these added extremely low money limits as well.

Finally, in 1916 only two new acts were placed on the statute books, in Kentucky (in place of the act of 1914 declared unconstitutional) and in Porto Rico. Both acts provided fairly liberal amounts—90 days with a $100 limit and 56 days without any limit.[1]

What explanation may be advanced for the seeming reversion to older standards which manifested itself so strongly in 1915? One is that the very delay until 1915 before passing a compensation act indicates a powerful opposition, a certain disregard of the interest of the wageworker, which expressed itself in the adoption of very low compensation benefits, including that of medical aid. That may seem true of Pennsylvania and Colorado. Of the remaining states, none is of great industrial importance, and agricultural localities cannot be expected to lead in industrial legislation. There may be another explanation in the general spread of fear lest the cost of medical aid become excessive, resulting from a rather superficial analysis of the experience of those states where compensation had been in operation for some time.

But much more significant is the tendency to increase the amount of medical benefit in the latter states. Of the 37 compensation systems now on the statute books of the country at this writing (December, 1916), five went into effect within the last twelve months, ten had been in force from one to two years, six from two to three years, three from three to four years, seven from four to five years, and six for five years or slightly over, the average

[1] See note at the end of article.

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age of the compensation systems in force being about three years and three months.[1] Nevertheless the amount of amending already done is considerable though only a small part of the amendments proposed actually succeeds in going through the numerous legislative stages.[2] With one or two exceptions, the acts of all states have been amended as frequently as their legislative sessions would permit. The frequency of these amendments is largely explained by the haste and inexpert draughtsmanship of the original enactments. Nevertheless it is a rather hopeful sign of willingness to correct errors committed. Most of these amendments deal with administrative details, but here and there the essential features of the system, such as the compensation scale, have been modified, and of these, most frequently the medical benefit.

The original Roseberry act of California (1911) allowed medical aid for 90 days under a limit of $100. The Boynton act of 1913 eliminated the $100 limit, and the amendment of 1915 did away with the 90 days' limit, at least in the gravest cases, by providing that this time may be extended by the Industrial Accident Commission. Furthermore it extended the scope of medical and surgical aid by including artificial limbs.

The Connecticut act of 1913 limited its medical aid to 30 days. An amendment of 1915 abolished all limits whatsoever. The original Massachusetts act of 1911 adopted the narrow New Jersey limit of 2 weeks. But the serious hardship in severe injuries caused by this limit soon became so obvious that in response to a strong recommendation of the Board[3] the act was amended in 1914 to require medical aid to be granted "in unusual cases, at the discretion of the board, for a longer period" (sec. 1, chap. 708, Acts of 1914, June 25, 1914). While the actual effect of this amendment is somewhat uncertain, owing to many possible interpretations of the phrase "unusual cases," and the uncertainty of the

[1] In fact, some of the acts were so radically changed, and in their earlier form had such limited application (California, Wisconsin, Ohio, etc.) that in reality the average age of the acts in force is very much shorter—nearer to two years and eight months.

[2] A card catalogue of compensation legislation, admittedly incomplete, contains at this time nearly 110 entries.

[3] Industrial Accident Board, *First Annual Report, 1912–1913*, p. 41.

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character of the board's "discretion," the intent of the amendment is obvious. As a matter of fact, the number of cases where medical aid is wanted beyond 2 weeks will not exceed 20 per cent, but that would be a rather liberal interpretation of the word "unusual."

The West Virginia act of 1913 established the liberal standard of no time limit and a money limit of $150. Nevertheless the amended act of 1915 further provided that "in case an injured employee has sustained a permanent disability and it is the opinion of the commissioner that the percentum of said disability can be reduced or made negligible by surgical or medical treatment" the amount may be raised to $300. Perhaps a heartless consideration, brutally put, but nevertheless an evidence of progress. Still more significant are the very liberal provision for medical and surgical aid in the Kern-McGillicuddy act of 1916, providing compensation for the employees of the United States Government and replacing the Alexander act of 1908 in which no provision for medical aid was made, and the amendment of 1915 to the Nevada act of 1913, for the first time providing medical and surgical services.

Not only these various enactments, but very definite statements from the administrative authorities clearly show that experience amply demonstrates the advantages of thorough medical attention. Thus, as early as 1913, the California Industrial Accident Board was of the opinion that "the first and best compensation that can be afforded to an injured workman is to place at his disposal the best skill of medical and surgical science of his time, for the purpose of restoring him as nearly as possible to the physical condition he was in before he was injured. This, we have reason to fear, will not always be done under the existing $100 limitation placed upon the employer and the insurance carrier by the law. Therefore, we ask that that limitation be removed and full medical and surgical attendance be required."[1]

In 1914 the Massachusetts Industrial Accident Board requested "that the legislature give the Board the power to require the payment of bills for medical and surgical treatment, medicines, medical and surgical supplies, crutches and apparatus, when

[1] California Accident Board, *First Annual Report*, 1913, p. 13.

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necessary beyond the first two weeks after the injury in unusual cases where the injury is so serious as to require and warrant such additional medical treatment,"[1] because "there is no doubt that if the injury continues more than two weeks the medical attention provided is not sufficient to keep the employee from being a subject of charity."[2] The emphasis upon the fact that the Massachusetts medical benefit "is less than most of the other states have provided" is an excellent argument of the advantages of lack of uniformity as proving a stimulus to the less progressive states.

Even the New Jersey Commission, "appointed to observe the operations of the law" without any power to correct evils, has reached the conclusion that at least in exceptional cases there should be provision for appeal to court for additional medical services.[3] In view of this development it is sufficient to refer to the change made in the New Jersey act by the amendment of 1913 (chap. 174, Acts of 1913) in reducing the maximum medical benefit from $100 to $50. In the brief history of compensation in this country this as yet remains the only example of a reduction on an important scale.

That in most states the limits are sufficiently low to strike a perceptible proportion of cases of injury is self-evident. All injured persons do not recover within two weeks. But exactly what proportion of cases is affected? No direct statistical answer to this question on the basis of American data is available, for the effects of the benefit scales of the American laws have not yet begun to be studied. But the assumption seems justifiable that rarely will medical aid be necessary beyond the period of temporary disability, e.g., that even in cases of permanent results the conclusion of the period of temporary disability as a rule indicates also the conclusion of all medical treatment. Scattered American data as to the distribution of accidents according to the duration of disability are available for a few states, but their comparative value is impaired by the difference in the number of lighter accidents

[1] Massachusetts Industrial Accident Board, *First Annual Report*, Boston, 1914, p. 51.

[2] *Ibid.*, p. 50.

[3] *Report of (New Jersey) Employer's Liability Commission for the Year 1914*, p. 8.

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included.[1] It seems preferable, therefore, to make use of the distribution of accidents according to severity as indicated in the "Standard Accident Table" constructed by the author as a basis for compensation rates.[2] According to this table, and using only "tabulatable" accidents (accidents causing disability on some other day besides the day of accident) as a basis, the number of cases, out of 100,000, in which the period of temporary total disability has not expired is:

After 7 days	62,504
" 14 "	38,218
" 21 "	25,792
" 28 "	18,479
" 56 "	6,043
" 91 "	2,204

The difference in medical services provided by different types of acts is therefore very substantial. In Texas some two-thirds of all injured must be affected; in New Jersey, Massachusetts, and seven other states adopting the 2-week standard, a great many more than one-third of the accidents, in fact nearly two-fifths; in Michigan and Nebraska, over one-fourth; in Indiana and Colorado, somewhat more than one-sixth.[3] But it must be remembered

[1] For instance, if all accident notices, no matter how slight, are included, as in Massachusetts, the proportion of serious accidents will be correspondingly reduced. On the other hand, in Wisconsin only compensatable accidents (i.e., those over one week's duration) are included.

[2] See "Standard Accident Table as a Basis for Compensation Rates," *Publications of American Statistical Association*, March, 1915. Also Spectator Co., New York, 1915.

[3] To some extent these proportions may be increased by the peculiar wording of the law. In New Jersey, e.g., the medical benefit is limited to the "first two weeks *after the injury*," which has been interpreted to mean the day of the accident. Not infrequently, however, the disability, or suffering, begins some time after the injury, and the period of medical aid is correspondingly reduced. Numerous instances of real distress due to this one cause are described in the investigation of the New Jersey law made by the American Association for Labor Legislation ("Three years under the New Jersey Workmen's Compensation Law," pp. 33–37). The following case offers a good illustration: "Paul R. had his toe crushed in a stove foundry. The company applied first-aid treatment, but did nothing further; more than two weeks later infection set in and the man was obliged to spend nearly six weeks in a hospital. The employer was not required to pay the hospital bill of $33.25 or the medical bill of $12, since they were contracted after the first two weeks." See also cases No. 154 and No. 259. Nevertheless, in most states the same perfectly purposeless limitation

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that this smaller share of accidents affected by the time limit represents the severe injuries, where both the economic loss and physical suffering are greatest.

When the limit is kept up at 8 weeks or 60 days, the number of accidents represented is very much smaller—only about 6 per cent, and only a little over 2 per cent may still need medical attention after 13 weeks have expired. Of course this rapid reduction of the number of accidents as the higher limits are reached suggests that the cost of further extensions must rapidly decrease, i.e., that it probably cost more to extend the limit from 1 week to 2 weeks than from 28 days to 90 days. The question of cost is reserved, however, for subsequent fuller consideration.

The accuracy of the statistical measurement here ventured must be materially affected by the money limits, which must (as they are intended to do) occasionally stop the supply of medical aid before the time limit has expired. As to that, still less information is available outside of the interesting data published by the Ohio Industrial Commission,[1] of awards made from March 1, 1912, to June 30, 1914, which are given in Table III: The Ohio act has no time limit to its medical benefits. Nevertheless the number of cases calling for large amounts of medical aid is extremely small. Only 1.2 per cent of the cases cost over $50 for medical aid during the period March, 1912, to December, 1913; and though in the later period there seems to have been a general rise in the cost of

exists (Connecticut [old act], Indiana, Louisiana, Maine, Massachusetts [old act], Michigan, Minnesota, Montana, Nevada, New Jersey, New York, Oklahoma, Rhode Island, and Texas). In other states (California, Colorado, Hawaii, Illinois, Iowa, Kentucky, Nebraska, Pennsylvania, Porto Rico, Vermont, and Wisconsin) the time limit is expressed in terms of duration of disability and is not dated from the time of injury. The Colorado act contains the very explicit language: "from the day the employee leaves work as the result of the injury." In Massachusetts the injustice of this section in the act of 1911 became so evident that upon recommendation of the Board (*First Annual Report*, p. 41) the language was amended in 1914. In Michigan and some other states the situation was met by decisions of boards and commissions. The situation offers an eloquent illustration of the great importance of expert bill drafting. In the latter formula the question of medical and surgical aid in case of an injury which does not result in disability might still be raised, though the writer is not aware of any cases of this character.

[1] *Ohio Industrial Commission*, Department of Investigation and Statistics, *Reports 2* and *4*.

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medical aid, the proportionate number did not rise much above 2 per cent. The table also indicates what might have been surmised, that a larger proportion of these cases calling for costly medical aid occurs among the permanent-disability cases. The peculiar significance of this fact will be referred to later. The higher money

TABLE III

DISTRIBUTION OF MEDICAL AWARDS BY AMOUNT IN OHIO

Amount of Award	Fatal Cases	Permanent Disability	Temporary Disability Over 7 Days	Temporary Disability under 7 Days	All Cases
	March 1, 1912—December 31, 1913				
Under $ 5.	5	6	1,075	6,811	7,897
$ 5– 10.	5	25	1,535	1,252	2,817
10– 25.	4	130	1,248	199	1,581
25– 50.	8	50	244	13	315
50– 75.	3	22	49	1	75
75– 100.	1	10	18	.....	29
100– 150.	1	9	14	1	25
150– 200.	1	7	10	.....	18
200.....	2	7	4	.....	13
Total....	30	266	4,197	8,277	12,770
	January 1, 1914—June 30, 1914				
Under $10...	25	50	4,990	8,099	13,164
$10– 15...	14	191	2,395	246	2,846
25– 50...	17	90	494	.....	601
50 and over.	16	107	233	.....	356
Total ...	72	438	8,112	8,345	16,967

limits, as shown in Table III, affect very few cases indeed. Thus, granted a medical benefit unlimited in time (the first nine states in Table II), only four cases out of a thousand will be affected by a money limit of $100, only two out of a thousand by a money limit of $150, as in Maryland, and only one in a thousand by a limit of $200.

The lower limits of $75, $50, $30, or even $25 cut somewhat more deeply into the amount of medical aid which otherwise would be furnished, since some 5 per cent of cases for the entire period of 26 months called for medical aid at a cost of over $25. It is

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reasonable to assume that only a small number of these cases were such that the 2 weeks' limit would not have exerted its influence long before the money limit.

Of course the length of time for which medical aid is allowed and the money limit placed upon its value indicate only the quantity and not the quality or kind of aid allowed. "Medical and surgical aid" is an elastic term. The effort to cure or at least minimize the physical results of an injury may call for various forms of expenditure. In this respect greater uniformity may be observed, the exact language of the acts in respect of medical aid following certain customary formulae.[1] As a broader provision, the formula of the Wisconsin act of 1913 may be quoted: "Such medical, surgical, and hospital treatment, medicines, medical and surgical supplies, crutches, and apparatus, as may be reasonably required at the time of the injury and thereafter during the disability . . . . to cure and relieve from the effects of the injury." This formula is reasonably complete. It repeats the formula of the earlier act of 1911, except that the word "hospital" has been added in the first line. But it is doubtful whether this addition is of great importance, for evidently, in cases requiring hospital care, the provision of the law granting medical and surgical treatment would not have been fulfilled unless hospital care was added. Substantially the same language is found in the acts of California and Minnesota. Closely allied is the formula of the New York act, followed by those of Maryland and Oklahoma: "such medical, surgical, or other attendance or treatment, nurse and hospital services, medicines, crutches, and apparatus as may be required or be requested by the employee" (sec. 13). This goes beyond the Wisconsin formula by specifying "other attendance," which may be interpreted to mean such specialties as orthopedic or dental work, though by construction all of it may be included under surgical treatment. Nurse service is also enumerated. When treatment is given in a hospital, this specific reference is evidently unnecessary; the term presents a certain danger of stimulating claims for nursing from members of family, the payment of which

[1] On the whole it is quite a significant feature of the compensation laws that there is much more uniformity in the language than in the substantive provisions.

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is hardly intended in the compensation act. Yet the occasions must arise when hospitals are not within reach and hired nurses may be necessary. If strict interpretation of the word of the law were always the rule, then the Wisconsin formula would have its advantage to the injured, because it clearly states that the medical benefit must be granted, not only "to cure" (which is in the interest of employer), but also "to relieve" the injured person, even if incurably injured. But it is evident that "necessary" medical aid should include both.

The broad character of the Wisconsin formula is fully recognized by the officials of that state. In the text of the act of 1913 issued by the Wisconsin Industrial Commission the following comment is made concerning the provisions for medical aid:

> This provision of the Wisconsin law is more liberal to the injured workman than that of any other compensation act. The provision must be construed liberally to carry out its humane purpose, but it must not be abused. So far the expense under this provision has been about 50 per cent of compensation, or one-third of the total cost. It should not be understood that this expense is without substantial benefit to the employer. Where the injured workman receives full and competent medical attendance he is able to return to work sooner, and many injuries which might otherwise result very seriously are quickly cured and compensation ceases. Under our act the cost of medical attendance is high, but there should be, and we think there is, a corresponding saving in compensation. At any rate the provision is humane and just. It is little less than criminal to cut off medical attendance at the expiration of two weeks, or limit the cost to $100, as is done in some acts. Only those with minor injuries are covered by such a provision, and those most seriously injured are cut off at a time when help is most needed.

The essential feature of both these formulae which distinguishes them from those of other acts is the definite statement concerning crutches and apparatus. Of the importance of these when they are needed little need be said. The number of cases calling for them must necessarily be small, if we remember that according to the standard accident table, 94,193 cases out of 100,000 result in temporary disability only, and that even of 4,875 cases of dismemberment only a few are sufficiently serious to call for such apparatus. The collective cost of such aid to recovery must be small, but in individual cases it must be considerable and beyond

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the means of the injured. It is significant, therefore, that the California act was amended in 1915 to include "artificial limbs"—as yet the only act that goes so far.

The New Jersey formula, followed by a large number of states, is much briefer and very much restricted, reading "reasonable medical and hospital services and medicines, as and when needed." This formula is reproduced exactly in eight states[1] and with very slight modifications in sixteen others.[2] It quite definitely excludes any apparatus or crutches. Medicines or supplies are omitted in many of the latter acts. In some states, again, the administrative commissions were forced to go beyond the provisions of the law. Thus the Massachusetts Board ruled[3] that "necessary carriage hire, crutches, trusses, etc., if furnished during the first two weeks after the injury, come within the meaning of reasonable medical and hospital services and medicines."

In this brief analysis the different time and money limits have been disregarded. But it is quite evident that the two methods of provision are closely related. Specific reference to crutches or apparatus would probably mean very little where the maximum limitation is $25, $30, or even $50. Even the time limits would have the same effect, for crutches or most other apparatus, and often even glasses, could not be fitted in an injury of any degree of severity before the expiration of the time limit.

In order to permit the purchase of an artificial limb, both the time limit and the money limit would have to be materially raised if not abolished altogether. But no matter how expensive artificial limbs may be, the cost of the provision would depend entirely upon the frequency with which this necessity might arise. According to the same "Standard Accident Table"[4] the cases of loss of leg, arms, or hand are only 402 out of 100,000 accidents, or one in 250.

[1] Louisiana, Maine, Massachusetts, Michigan, Nebraska, Pennsylvania, Rhode Island, and Texas.

[2] Canal Zone, Colorado, Connecticut, Hawaii, Illinois, Indiana, Iowa, Kentucky, Montana, Nevada, Ohio, Oregon, United States, Vermont, Kentucky, and West Virginia; nurse services are especially mentioned in several states.

[3] Massachusetts Industrial Accident Board, *Bulletin No. 2*, January, 1913. Decisions and rulings, p. 10.

[4] *Op. cit.*, p. 21.

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It is evident, therefore, that to some extent the low money limits, and to a very much larger extent the time limits, cause the medical benefit to be discontinued in grave cases when the injured is imperatively in need of it. The situation may be met in one of three or four different ways:

1. The injured person may remain without adequate medical aid, or be obliged to leave the hospital too soon, or forego the necessary operation, or remain without the necessary apparatus, thus incurring much suffering that might be prevented, and also interfering with the greatest possible restitution of earning capacity.

2. He may be able to purchase the necessary amount of medical aid. In the majority of cases, however, this will be done at the expense of the very modest standard of living for himself and dependents which the compensation-benefits scales provide. It must be remembered that, with some exceptions, low medical benefits are found side by side with a low compensation scale of 50 per cent and a waiting period of 2 weeks. The immediate effect of the accident is to cut off the weekly income. There is no pay envelope for two weeks, but meanwhile medical aid is furnished either at home or in a hospital, and the family is forced to draw upon its savings, if there are any, or to go into debt. By the time the medical benefit reaches the limit, the economic status of the family may be seriously impaired, yet another week at least must elapse before the first compensation benefit, amounting to half the weekly pay, is received. That the necessity of meeting additional medical or hospital charges under these circumstances must be a hardship need hardly be argued.[1]

3. The injured person may fall back upon charitable aid, by applying to a free public medical institution. This is likely to be the most frequent way out of the difficulty. Assuming that public institutions are easily available, all the necessary medical

[1] For a few illustrative cases see the report of the American Association for Labor Legislation in "Three Years under the New Jersey Workmen's Compensation Law" (*American Labor Legislation Review*, V, No. 1.), especially pp. 64–68: case 13, totally disabled for 24 weeks, compensation $5.40 per week, medical bill $85 ($35 over the limit); case 103, amputation of thumb, medical expenses $125 ($75 over the limit); case 114, loss of an eye, compensation $674.36, medical expenses $241.35 ($191.35 above the limit).

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attendance may be obtained in this way. But the objections to this method are obvious. It goes contrary to all the theory underlying compensation legislation: it forces the injured person to become a pauper, and places upon public charitable funds the burden which, according to the theory of compensation, should be carried by industry. Again, it demands from the medical profession an amount of gratuitous service which physicians are inclined to resent more and more, now that they have become alive to the possibilities of accident compensation.[1]

4. The employer, or the insurance carrier acting for him, may voluntarily furnish the additional medical attendance necessary over and above the law, even including crutches, apparatus, and artificial limbs. This happens much more frequently than the public outside of the insurance circles is aware.[2] The writer has no intention of holding a brief for the insurance companies. This additional voluntary service (which has become sufficiently important to justify the coining of a trade term "non-statutory medical aid") is not granted out of any philanthropic considerations such as may influence the individual employer to assume the cost, or,

[1] "One hospital, which is forbidden by its charter to charge for its services, estimated that it treated three-quarters of all the work accidents occurring in the city in which it was located. Another hospital stated that it usually received nothing for services required out of the amount provided by the act."—"Three Years under the New Jersey Workmen's Compensation Law," p. 18. See also the following cases in the same report on New Jersey: case 88, 5 weeks in hospital, only 2 weeks paid for; case 80, 10½ weeks in hospital, only 2 paid for; case 253, medical attendance was required for 4 months, including two operations; only 2 weeks paid for. "The average time in the (Newark City) hospital for 44 non-fatal cases was twenty-four days. Of these cases . . . . 16 remained over 30 days, 3 over 60 days, and 2 over 90 days. In 25 cases of fractures which could be identified as due to work accidents, the average time in the hospital was 37 days" (p. 66). "One large New Jersey hospital estimated . . . . that the medical expenses of about one-fifth of these were not entirely covered by the law. In probably the majority of instances necessary medical attention beyond the legal allowance has been given free by doctors or hospitals or paid for by charitable organizations" (p. 68).

[2] "In many cases the employers and insurance companies are paying a larger amount than that fixed by the statute. As a rule, this additional expenditure is made for the purpose of facilitating the recovery of the workman so as to reduce the amount payable for recovery" (American Federation of Labor and National Civic Federation, *Workmen's Compensation Report upon Operation of State Laws*. Sixty-third Congress, Second Session, S. Doc. 419, p. 31).

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even more frequently, convince him that the assurance company should assume the cost.[1] These expenditures for "non-statutory aid," for employing an expert surgeon to operate, or a high-priced specialist to make a diagnosis, for taking X-ray photographs, or even buying an artificial limb, are carefully weighed with the cost of the service, carefully balanced against the possible saving in compensation. In one case in California the employer who granted medical aid beyond the 90 days' period endeavored to deduct the cost from the amount of compensation due. He was overruled by the commission, which declared it contrary to the law (*Paul W. Cypher* v. *United Development Co.*, October 10, 1914). The following actual case quoted in an official California report aptly illustrates this situation:

One such case came under the observation of this Board in which the crushing of one leg below the knee necessitated either the amputation of the injured member or the transference of sound bone from the uninjured leg to the injured one and its grafting into the broken fragments, a process that required several months of surgical attention and hospital treatment. Fortunately, the latter course was pursued and both legs were made nearly as good as new, but the surgical and hospital expense totalled $1,000, whereupon the balance sheet stood as follows under the California law:[2]

Amputation of leg, maximum liability of employer under present law....	$ 100.00
Temporary total disability, 5 weeks at $16.90 per week, the weekly wage being $26.....	84.50
Permanent partial disability at 60 per cent of total, 391 weeks at $10.14.	3,965.50
Total cost to employer under limited medical attendance.....	$4,150.00
Medical, surgical, and hospital expense.....	$1,000.00
Temporary total disability, 26 weeks at $16.90.....	439.40
Permanent partial disability, 10 per cent for 754 weeks.....	1,274.25
Total cost to employer.....	$2,713.65

That is, in this case full medical attendance meant a saving of about $1,400. While this may serve as a very grateful evidence of the social value of enlightened self-interest, there are several reasons

[1] Complete protection through insurance has often a wonderful influence upon the employer in making him recognize the rights of the injured employee.

[2] Memorandum concerning a proposed scale of compensation benefits to be paid to workmen injured through industrial accident now under consideration by the Industrial Accident Board of California (1912?).

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why it does not offer an altogether satisfactory solution of the difficulties:

It is one thing to shape legislation so as to make use of this economic motive to obtain socially desirable results, and quite another to depend upon it exclusively to accomplish what is desirable. The average adjuster of claims may not be enlightened enough to see the far-reaching results of such liberal medical treatment, and the stimulus to keep the medical cost down to the lowest legal limit must in most cases be overwhelming.

Moreover, one would scarcely want to depend entirely upon someone else's economic motive for the preservation of health and limb, nay, even life.[1] The explanation for all these strict limitations upon the amount of medical aid is obviously the desire to keep down the cost of medical aid as one of the methods of keeping down the cost of compensation. That this was perhaps the most unwise direction the employer's economy could take will be shown later, when the effects of these limitations are studied. But it is still more difficult to understand the curious theory of a "compensation fund" similar to the old "wage-fund theory" of the classical economists which gained considerable popularity for a time. When, for instance, the $25 limitation was first proposed in Pennsylvania, the representatives of organized labor felt that "it will be rather severe for the average man to be laid up for two weeks without pay and with only $25 for the doctor's bill, especially if the accident is a serious one. But if, as the result of this concession, he is able to get a little more money for the more serious accidents, and

[1] In one case with which the writer is personally familiar—a very bad compound comminuted fracture of the femur (fracture of the shaft bone of the leg at several places with crushing of parts of bone and exposure of the injured bone to the surface through laceration of muscles, an especially serious complication)—the injured person was in the hospital 16 weeks, i.e., 8 weeks after the legal limit for medical aid under the New York Compensation law. His condition at the time was serious, and even dangerous to life. The question, how much more money should be spent for hospital care and operations, possibly amputation, was seriously discussed by the insurance company. In this discussion the probable cost of compensation for an amputated leg and even for death were carefully considered. Fortunately for the man, the presence of a young wife and two young children made the cost of compensation for death very heavy and was used as an argument for the most liberal allowance to save the man's life. But supposing he had been an altogether unattached individual?

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especially a life pension if he is totally crippled, the sacrifice will seem well worth while."[1] The representatives of organized labor evidently assumed that satisfactory treatments of both features were mutually exclusive. Needless to say, Pennsylvania labor did not get the more liberal treatment of severe injuries, because of this complacent attitude.[2]

Another potent factor was the exaggerated fear of "medical graft." An experienced casualty man and prolific writer on compensation expressed the opinion that "the medical feature of the law will always cost more to employers than all other features of the law."[3] Of course this statement represents a gross exaggeration. As a horrible example the French compensation law is cited, which is designated as the "Doctor's Graft Law."[4] The workmen are said to be "taking money out of their own pockets by insisting upon this feature of the bill." Little faith in the honesty of the medical profession is manifested in the following statement: "Even if you should put on a limit of, say, $100, as New Jersey does, and cut the time to two weeks, you would find that the amount the employer will be called upon to pay in a great majority of cases will be $100—or just a few dollars less."[5]

Even organized labor was sufficiently influenced by this exaggerated phantom of a "medical graft" to agree to the narrowest limitations of medical aid, as the $25 in Pennsylvania. "It is doubtful," argue representatives of the Pennsylvania Federation

[1] Proposed Workman's Compensation Act of Pennsylvania, *Report of the Conference of the Delegates of the Pennsylvania Federation of Labor with The Industrial Accident Commission*, 1912.

[2] The most extreme statement of this compensation-fund theory may be credited to a well-known insurance man, Mr. Edson S. Lott. "The waiting period should be two months. By eliminating the smaller misfortunes, you leave your fund for the use of alleviating real distress—permanent injuries and the like—instead of dissipating it for comparatively inconsequential injuries. To be laid up for a month is a misfortune, but not a real calamity. If the fund is eaten up for misfortunes, there is nothing left for calamities." It does not seem to occur to Mr. Lott that both misfortunes and calamities might and should be provided for (*Which Will Be Best for the Workman?* by Edson S. Lott, p. 124).

[3] *Which Will Be Best for the Workman?* By Edson S. Lott, New York, 1913, p. 126 (letter to the Michigan Commissioner of Insurance).

[4] *Ibid.*, p. 126.

[5] *Ibid.*, p. 125.

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of Labor, "whether an increase in the allowance for the doctor would benefit the workingman. Experience shows that the doctors usually file a bill for the maximum amount."[1]

How far from the mark these statements fall is readily demonstrated by the Ohio data quoted on page 605. Notwithstanding such gross exaggerations, these fears rapidly spread throughout almost all the compensation states. A basis for them was found under liability-insurance conditions. Though seldom more than first aid was given, the physician was called in an emergency, and he was conscious of the double position, not only as the medical attendant, but also as possible important witness in defense of a liability suit. He presented substantial, sometimes extravagant, bills, and the liability insurance company seldom found it advisable to oppose their size. Hasty interpretation of early compensation statistics seemed to corroborate the fear of excessive medical costs. In every state the early months of application of the compensation law called forth loud complaints that the cost of medical services absorbed too great a proportion of the cost of compensation. The Industrial Commission of Wisconsin in its second annual report, covering the year July, 1912—June 30, 1913, expresses its alarm that "the cost of medical attendance, including hospital and nurse hire, has averaged 50 per cent of the indemnity that has been paid to the injured employee" (i.e., 33⅓ per cent of the total cost of compensation).

In California the adoption of the compulsory act which went into effect on January 1, 1914, was followed by similar complaints which found seeming corroboration in the experience of the State Insurance Fund for the first six months (January 1—June 30, 1914) in paying out $8,783.38 in compensation and $12,844.50 in medical aid. For the entire state, experience of the first six months of the year indicates payments for:

Compensation	$187,187
Medical bills	155,157
Total	$342,344

[1] Proposed Workmen's Compensation Act of Pennsylvania, *Report of the Conference of the Delegates of the Pennsylvania Federation of Labor with the Industrial Accidents Commission*, 1912.

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The cost of medical aid thus represents 83 per cent of the compensation, or 45 per cent of the total paid cost. The same situation was revealed in other states.

It is evident to the careful statistician, first, that these complaints were largely due to a misunderstanding. Since medical bills mature rapidly, while compensation benefits are payable in weekly instalments and the bulk of them is long deferred, the proportion of cash medical payments to cash compensation payments in the early months or even years of compensation experience can mean very little. Even if an effort was made to estimate the future payments on the accidents which occurred, the opportunity for error was great.

Secondly, the proportion of medical payments to compensation payments is not quite a fair measure of the cost. This proportion may vary between state and state even under identical provision for medical aid, because the basis, i.e., the scale of compensation, is different. The lower the basis of compensation the larger will necessarily be the share devoted to medical expense. In France, for instance, the cost of medical treatment (including even the cost of medical control of the injured) varies between 12.5 per cent and 15 per cent of the total cost, or 14 per cent and 17½ per cent of the cost of compensation; but that is based upon a scale of compensation which is considerably higher than any in the United States.

Usual estimates of the cost of medical aid in various states run between one-third and one-half of the amount paid out in compensation to the injured; i.e., for every dollar paid to the workman or his dependents from 33 to 50 cents is paid to the physicians and hospitals. Of the total cost, therefore, medical aid would absorb from 25 to 33 per cent. For one or two states more definite figures are available. Those for Massachusetts are presented in Table IV.[1]

Here it evidently makes a difference whether the proportion of expense which goes for medical benefits is computed on the basis of amounts actually paid out or on the total liability incurred—that is, amount paid or outstanding. Medical benefits for the two years constitute 30.7 per cent of the total amount actually

[1] These figures were obtained from preliminary blue-sheets issued by the Massachusetts insurance Department, on file, 1915.

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paid out, or 21.8 per cent of the total amount paid or outstanding. The proportion of medical benefits to compensation alone was 44.3 per cent in the case of compensation actually paid, or 27.9 per cent of compensation paid or outstanding.[1] These figures may appear excessive as long as the percentages are kept in mind.

TABLE IV

	Compensation	Medical	Total	Per Cent Medical
On policies issued in 1912:				
Amount paid out*	$ 973,632	$372,278	$1,345,910	27.7
Amount outstanding	480,784	9,860	490,644	2.0
Total liability incurred	$1,454,416	$382,138	$1,836,554	20.8
On policies issued in January–September, 1913:				
Amount paid out*	$ 649,609	$345,603	$ 995,212	34.7
Amount outstanding	632,869	32,232	665,101	4.8
Total liability incurred	$1,282,478	$377,835	$1,660,313	22.7
On all policies issued July 1, 1912—September 30, 1913:				
Amount paid out	$1,623,241	$717,881	$2,341,122	30.7
Amount outstanding	1,113,653	42,092	1,155,745	3.6
Total liability incurred	$2,736,894	$759,973	$3,496,867	21.8

* Up to December 31, 1914.

But as a matter of fact the data for the first group cover wage exposure of some 505 million dollars, and for the second period for 395 million dollars, making a total exposure of 900 million dollars, or perhaps 1,800,000 annual workers. Expressed in proportion to the pay-roll exposed (as all compensation insurance charges are

[1] It is characteristic of the primitive condition of our compensation statistics that for the same state different data are published by the Industrial Accident Board, covering the first twelve months' period, July 1, 1912—June 30, 1913 (*First Annual Report*, p. 326). According to these, the total compensation for accidents of that period amounted to $1,253,185 and medical expenses to $414,195, making a total of $1,667,380, of which the medical constituted 24.8 per cent. The total number of accidents reported to insurance companies was 73,251, making the average medical expenses $5.66. But in 31,768 trivial accidents neither medical expense nor compensation was paid, excluding which the average is $10. Of the remaining 31,383 accidents, 26,303 called for medical expenses only, which indicates the importance of the problem.

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calculated), the cost for the first period was 7½ cents per $100 of wages, during the second period 9½ cents, and for the entire period about 8½ cents, or on an average wage of $600, 51 cents per worker. The increase from 45 cents to 57 cents in one year is significant, but nevertheless the entire cost is extremely moderate.

In Illinois, data for the accidents of 1912 have been published[1] as shown in Table V. The average cost of medical aid for a fatal

TABLE V

	Number	Compensation	Medical	Total	Per Cent Medical
Fatal accidents.....	183	$177,317	$ 2,153	$179,470	1.2
Non-fatal accidents..	8,730	283,992	60,664	344,656	17.6
Total.....	8,913	$461,309	$62,817	$524,126	12.0

accident is stated to be $11.77 and for a non-fatal one only $6.97, thus producing but little support for the extravagant charges of medical graft.

Data were also published for the state of Ohio,[2] which are given in Table VI.

TABLE VI

	Compensation	Medical*	Total	Per Cent Medical
March 1, 1912—December 31, 1913	$ 293,340	$ 83,957	$ 377,297	22.3
January 1, 1914—June 30, 1914..	757,162	146,798	903,960	16.2
Total.....	$1,050,502	$230,755	$1,281,257	18.0

* State fund only. For employers carrying their own insurance no data as to medical benefits are available.

The proportion of the cost of medical aid to the total cost is here smaller than in Massachusetts, but without any reference to the pay-roll exposed, for which data are unfortunately not available, the comparison is dangerous, because the entire scale of benefits is so much higher in Ohio (perhaps by 70 per cent) than it

[1] *Sixth Report of the Illinois Bureau of Labor Statistics*, "Industrial Accidents in Illinois for 1912," p. 30.

[2] Ohio Industrial Commission, Department of Investigation and Statistics, *Report 2* (March 1, 1912—December 31, 1913) and *Report 4* (January 1—June 30, 1914).

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was in Massachusetts until the amendment of 1914 took effect. On an assumption of that difference in the cost of compensation, the proportion of 22 per cent in the cost of medical to compensation in Ohio would equal 1.70×22 per cent or 37.5 per cent on the basis of Massachusetts compensation, or about 35 per cent over the Massachusetts medical cost $\left(\frac{37.5}{27.9} = 1.35\right)$, some 12.8 cents per $100 of wages (9.5 cents $\times$ 1.35 = 12.8 cents) or 77 cents per annum per average worker with an annual wage of $600.

A very large body of experience of the most important casualty companies seems to indicate that, as against the Massachusetts cost of 8½ cents per $100 of wages, the cost in Michigan was 10.8 cents, in Illinois 13 cents, and in New Jersey only 6.4 cents. This seems to agree with the comparative liberality of provision concerning medical aid in these states. The proportion alone is therefore a very unreliable measure of cost. There seems to be a great deal of truth in the following expression of views of a practicing physician in Massachusetts:

> There seems to be a great stress laid on the percentage paid the doctors. Now if we were paying compensation to well people we could easily understand why that criticism would be just, but we are paying compensation to a man more in need of medical service than he is of bread. If a man has a septic hand it may be a question of life and death; if a man has a broken leg, it is a question perhaps of his future earnings.[1]

As appears from the foregoing fragmentary data, the entire matter of statistics of accident compensation in this country is as yet in a very unsatisfactory condition. Efforts are, however, in evidence to bring some order into this chaos. The various government bodies charged with the supervision of workmen's compensation are organized into a National Association of Workmen's Compensation Boards, which has a standing committee for standardization of the statistical reports of these Boards. As yet, the boards or commissions of Massachusetts, California, Washington, and Ohio are the only ones to publish substantial statistics, and the

[1] Massachusetts Industrial Accident Board, *Bulletin No. 4*, April, 1913. "Medical Services under the Workmen's Compensation Act," p. 15.

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absence of a uniform plan makes comparisons difficult.[1] The New York Commission, when consolidated with the Department of Labor, had the good fortune of finding Dr. L. W. Hatch and his Bureau of Statistics available for its work, which offers a promise of rich results. On the other hand, the Workmen's Compensation Service Bureau, an organization of some twenty casualty insurance companies, has found accurate statistics indispensable for rate-making, and has evolved an extremely interesting plan for co-operative statistics which will cover much more than half the volume of compensation insurance in this country.[2]

Finally, the organization of the Casualty Actuarial and Statistical Society of America in November, 1914, furnishes a special scientific body for the study of the problems of compensation in the light of statistical experience, facilitated by the appointment of a special committee in compensation statistics. In his very interest-

TABLE VII

COST OF MEDICAL AND HOSPITAL SERVICES

Kind of Medical Benefit	1	2	3	4	5	6
	Death	Specified Injuries (Dismemberment)	Permanent Total Disabilities	Permanent Partial Disabilities	Temporary Disabilities	Medical and Hospital Services Only
Medical services ...	.....	.....	.....	.....	.....	.....
Hospital services...	.....	.....	.....	.....	.....	.....
Nurses.....	.....	.....	.....	.....	.....	.....
Ambulances	.....	.....	.....	.....	.....	.....
Surgical appliances.	.....	.....	.....	.....	.....	.....
Total	.....	.....	.....	.....	.....	.....

ing paper on "Essential Factors in the Computation of Cost of Workmen's Compensation"[3] Mr. W. A. Magown, then chief of the Compensation Bureau of the Massachusetts Insurance Department, suggested the analysis of medical payments under compensation given in Table VII. Such an analysis would furnish accurate data,

[1] See E. H. Downey, "Essentials of Workmen's Compensation Statistics," *Journal of Political Economy*, December, 1914.

[2] C. E. Scattergood in the *Journal of Commerce*, January 1, 1915.

[3] *Proceedings of the Casualty Actuarial and Statistical Society of America*, I, November 2, 1914, p. 189.

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not only as to comparative cost of the various subdivisions of the generic term "medical aid," but also as to the comparative importance of these services for different groups of accidents. A comparison of these data for different states, especially with reference to the number of cases handled, will give very interesting results. But a further, more refined, analysis may lead to even more valuable conclusions. To quote from the writer's presidential address before the second meeting of the Casualty Actuarial and Statistical Society:

> I should like to know, for instance, what effect, if any, the wage of the injured has upon the duration of injury, and whether it is true that a higher compensation scale, by offering a greater incentive to malingering, increases the duration of disability, or whether the opposite may not be true by any manner of means, that by furnishing a greater measure of help and comfort, the higher compensation scale does lead to more rapid recovery. One or two acts have failed to embody medical aid in their compensation acts. I should like to know whether that influences the duration of identical injuries.

A similar analysis may also shed some light upon the effects of the various limitations of medical aid, described in the preceding pages.

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Note.—Since this article was prepared several new compensation laws were passed in 1917, and many other acts were amended. The provisions of the new acts and amendments dealing with the subject of medical aid will be analyzed in a supplementary note following the second part of this study in the July issue of the *Journal of Political Economy*.

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NOTES

WASHINGTON NOTES

THE NEW WAR LOAN

During the past month plans for floating the great loan provided for by Congress have assumed definite shape, and the process of actually securing subscriptions to the bonds is now well under way. Whether regarded as an independent financial operation, unprecedented in size and in the conditions under which it was undertaken, or whether it be considered as simply the first step in the process of financing our present European contest, the loan is of unusual interest to financiers and students of economics. It comes at a time which presents many peculiar aspects of banking and credit, and must succeed under conditions that in other circumstances would possibly be regarded as forbidding any real progress. The amount now offered is $2,000,000,000.

The loan has taken shape as a 3½ per cent security offered in denominations running down to $50, containing the proviso that it may be refunded into higher-rate bonds at any time in the future when the government finds itself compelled to put out a new issue under terms more favorable to the borrower, redeemable or refundable after 15 years but running not to exceed 30 years, and without the so-called "circulation privilege." Perhaps the most interesting aspect of the offering is found in the conditions of national credit under which it is placed on the market. Great Britain, whose borrowing power is apparently better than that of any of the other belligerent countries, has been obtaining funds in this country upon loans amply protected by collateral notes varying around 6 per cent. During the war she has been able to obtain immense sums of money, her debt, everything included, being now in the neighborhood of $18,000,000,000, or probably more than five times what it was before the war. Other European countries have followed her example. All have, meanwhile, come to the United States for the purpose of meeting necessities of capital, food, money, clothing, and munitions. Their credit has now substantially given out, and the government of the United States has assumed the responsibility of practically sustaining their military operations by enabling them to buy what they need in this country on credit. Under these conditions

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the question is well worthy of consideration, What is the extent to which the United States can go in meeting these demands? The special importance of the problem is found in the fact that the United States today is the last reservoir of liquid capital in the world; in other words, nowhere outside of its own boundaries can it borrow in considerable amount. It will not have an "external" war debt, because there are, to all intents and purposes, no countries that are in position to take up its bonds. Its debt must be almost exclusively domestic. In this respect its condition is more closely parallel to that of Germany than to that of any other country, inasmuch as Germany has in the same way financed herself entirely from within, both her financial connections and her import and export trade having been practically shut off very early in the war. The real question for the United States, as for Germany today, is how far annual production exceeds annual consumption; that is to say, what is the annual economic surplus? It can conceivably take by taxation or by borrowing the total amount of this surplus, and can devote it to the needs of the Allies abroad, or to the support of men unproductively employed at home in military occupations. More than this it cannot do, for the reason that what is wanted in this case is not money, or security, or credit, but the actual goods and services that are useful in the maintenance of the war and of military forces at home and abroad. There is no trustworthy estimate of the annual surplus of production over consumption in the United States. Our ownership of wealth is variously estimated at from $180,000,000,000 to $220,000,000,000, and on this principal an annual net earning at 5 per cent would be, say, $10,000,000,000. Various estimates placing our annual investable surplus at from $5,000,000,000 to $10,000,000,000 are current, but the amount is likely to be nearer the former than the latter figure. The present conditions of consumption and expenditure among all classes being considered, $5,000,000,000 to $10,000,000,000 may be regarded as the actual amount that could be supplied if we were to devote our annual savings entirely to the conduct of the war.

BORROWING POWER OF THE NATION

To attempt to give more than this annual surplus would have the result only of an apparent or fictitious acquisition of means by the government. If, for example, the Treasury were to be extended credit by banks to an amount which, combined with the contributions of the community above the total obtained through loans and taxation, amounted to more than the annual surplus of wealth, the result would

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be simply the making of an artificial demand for goods which did not exist, with a consequent advance in prices, so that the goods actually produced would be equal, at their new level of prices, to the funds offered for them. This method of borrowing would not result in getting more, because there would be no more to get, in the way of goods, but it would inflict greater hardship upon the community. The result would be self-enforced economy due to the fact that everyone would have to pay higher prices and would consume less than before.

Eventually it might be possible thus to acquire a greater amount of surplus wealth available for the uses of the government, but only through a difficult and painful process. These fundamental economic conditions set the limit to the real success of the government financing that is now being undertaken.

On the other hand, it being assumed that the aggregate amount of the loan to be floated is carefully and scientifically ascertained and fixed at a point that is not excessive and does not represent an effort to take from the public more than it can properly part with, there is yet a very serious problem to be met in determining and applying the methods by which the annual productive surplus of the country is to be taken over. The process of acquiring the total annual surplus output of a great nation cannot, of course, be exactly accurate, and involves serious dangers of maladjustment and error. The first problem to be disposed of is that of avoiding any disturbance to existing values more than can be helped, and particularly of avoiding disturbance to banking institutions. Discussion based on the experience of England in the present war has made it seem axiomatic that government bonds should not be placed in the hands of commercial banking institutions any more than can be avoided, but that they should be located as early and in as large proportion as practicable with the ultimate holders, whether these be savings banks or private investors. In appealing to private investors the government has to bear in mind that such possible investors are divisible into several classes. They may be investors who already own a given volume of securities, but who are willing to dispose of these securities in order to obtain means with which to buy government bonds. Such sales of existing securities mean that the power of those who take them up to buy bonds is itself curtailed to a corresponding extent. If it be assumed, therefore, that the persons who are induced to buy these old securities would have bought government bonds instead, the sale is really a transfer or shift whereby the government securities have taken their place in the hands of the investors who formerly owned such privately issued

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bonds. On the other hand, again, the buyer of the bonds may be an individual who purposes to pay for them out of his current income, either on the instalment plan or by obtaining from his bank a temporary loan which enables him to carry the new securities until he can pay off what is due. Again, the bond buyer may not wish to sell his old securities, but may have obtained a semipermanent loan protected by them from the bank, the proceeds of which he uses to purchase government bonds. Clearly, in all of these cases, the transaction, viewed from the broad economic point of view, is a change of ownership, except in those instances where the purchase of the bonds represents a real investment out of current income made by the recipient of such income, who abstains from the use of it. Anything else is a mere financial shift or readjustment which would be satisfactory in ordinary times because it would give the government control of a certain proportion of the community's purchasing power, but which in this case is of less value because what is desired is to obtain practically the whole of the new purchasing power of the community. All this is well enough recognized today, and accounts for the strong effort that is being made by those in charge of the loan to interest the small investor and saver, making the enterprise truly national in the best sense of the term by getting practically the whole population interested in the bonds and disposed to pay for them through a process of saving. Of course this will imply some effort on the part of the banks to carry the bonds during the time when purchasers need assistance in anticipation of their savings or wages and are therefore obliged to resort to the banks for temporary accommodation. This, however, is an enlargement of bank credit which may be regarded as temporary and consequently not of a dangerous variety.

RATES OF INTEREST AND THEIR EFFECT

The fact that the bonds have been rated at 3½ per cent and have been made non-taxable has led to a great deal of criticism in many quarters. Analysis shows, however, that this question of rate is a very difficult and two-sided question. Had the bonds been placed at the current or market rate of interest—say 5 per cent—and been made subject to taxation, they would, it is argued, have appealed much more strongly to the small saver and investor. If asked today to take a government bond at 3½ per cent the investor naturally casts a regretful eye toward sound privately issued securities which offer him 5 or 6 per cent. Exemption from taxation is of no particular value to him

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because he is not subject to the higher ranges of the income tax, hence has not a very important interest in exemption provisions. The terms of the loan are therefore said to be such as to appeal strongly to the wealthier classes in the community, which is disposed either to throw over its old investments, or to abstain from investments of this same type and to substitute the new bonds, because by so doing such investors will obtain a tax-free security whose income value may be nearly equal to that of the taxable bonds bearing higher rates. There is, however, as already intimated, another side of this situation. Had the new bonds been made to bear 5 per cent and to be subject to taxation from the outset, thus directly appealing to the small investor, he would in many cases have immediately withdrawn his funds from savings banks for the purpose of purchasing the new bonds. The savings banks would thereupon have been obliged to realize upon their securities in order to meet this type of demand—a call which they could have complied with only by actually selling the securities or by obtaining loans at banks with the securities as collateral. Had they followed either of these courses, the result would have been somewhat similar to that which is today being produced by the process of disposing of the securities held by the wealthier members of the community. Securities would have been placed on the market or bank credits would have been absorbed on the basis of these securities, as a result of action taken by savings banks and other institutions which would have found their clientèle leaving them in order to become investors in government bonds. Either way of handling the situation, therefore, almost inevitably results in a readjustment of values and a redistribution of ownership of securities.

REQUIREMENTS OF THE GOVERNMENT

The question how long the present borrowing plan will supply the funds needed is much under discussion, but can be readily answered from the figures already made known. Apparently the government has been financing the Allies at the rate of about $400,000,000 per month, with some prospect of raising this rate to $600,000,000 for a time. It has itself undertaken expenses for its own purposes which were estimated at $3,000,000,000 originally, but have now climbed to a figure in the neighborhood of $4,000,000,000 per annum. It being assumed that matters will proceed at their present rate, it would appear that the effort must be made to supply something like $800,000,000 each month. Should this prove to be more than the actual surplus of production over consumption, even with the surplus augmented by increasing economy on the part

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of all classes, the result would be as already forecast. Should the sum needed prove to be only approximately equal to the surplus within the country, the process of obtaining it would still be a matter of extensive adjustment and rearrangement. With taxation enacted to the extent of, say, $2,000,000,000 a year, it would seem that the proceeds from the loan now planned, amounting to $2,000,000,000, would not last more than from four to five months. This would mean that fresh loan operations of a similar proportion must be undertaken before the end of that time. The country has, in other words, embarked upon a process of extracting from itself about all that it can currently surrender, and this process will become more and more severe in effect as time goes on, and as the current surplus of production becomes more and more closely withdrawn or taken up. Opinions differ regarding the effect of the process upon production and trade, but there need be comparatively little variation of view on that score. The undertaking now in process inevitably means a speeding up of productive machinery to the highest point in certain industries, and the curtailment of the operation of other industries as the result of taxation or lack of demand for their output. We must, in short, expect to see a gradual, although sure, concentration of demand upon the output of comparatively few industries, and a compression of the demand for the product of others. This process will necessarily mean suffering and readjustment over a longer or shorter period, but extreme activity in every line that produces the goods that are in demand. High wages, profits, and interest are to be expected, while taxation will probably be far higher in proportion to normal levels than any of these, and prices higher still. Government control as a guiding element is already being extensively introduced into many economic fields, but the possibility of ultimately beneficial effects from its use is as uncertain here as in Europe, with the additional factor of discouragement that European experience in connection with it has already broken down.

THE PROGRAM OF TAXATION

It is too early as yet to speak definitely of the plans of taxation which are to accompany the new borrowing program. At the outset two methods of dealing with this subject were suggested, the one that of beginning the contest with resources largely derived from the sale of bonds, the other that of imposing taxation without delay to an amount as great as the general public could be induced to bear. The latter policy is the one that has been adopted by leaders in Congress, and economists

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have indulged in much vague discussion about what is called "conscription of income." This is all based upon the accepted and axiomatic principle that it is desirable to obtain the necessary funds for the maintenance of the war as much as possible from taxation and as little as possible from borrowing. Since the evident necessities of the case will call for the contribution, either by taxation or by borrowing, of practically the whole surplus of the country, as already seen, the question whether it is obtained through loans or taxation assumes a relatively minor place, granting sound management of the banking mechanism. The difficulty of the problem lies in the fact that the psychological effect of taxation is very different from that of public borrowing, while the direct business effects are likely to be injurious unless the tax provisions are worked out with great care.

Bull of the worst sort

In reporting an unprecedentedly large program of taxation, the House Ways and Means Committee (H.R. 4280) has proposed a measure which may possibly tend to restrict the successful placing of the great loans now in prospect. The adoption of the plan of waiting for the passage of the taxation measure until after the first loan had succeeded and the war requirements were better recognized, would, it is thought by capable observers, probably have been the wiser plan; or, if such a measure were to be proposed at once, it would have been better to have begun it upon a more limited scale in order to give less cause for discouragement and anxiety to prospective taxpayers. Special criticism has been offered in many quarters upon the plan of back-dating the new income tax. But, as already stated, it is too early as yet to reach a definite conclusion about the scope or the final effects of the new taxation, inasmuch as the measure will necessarily pass through many legislative changes before it reaches the statute books. In its present stage it is of interest chiefly as a factor in the general fiscal program, and as having, therefore, a distinct bearing upon the placing of the new bond issues.

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BOOK REVIEWS AND NOTICES

The Morals of Monopoly and Competition. By H. B. REED. Menasha, Wis.: George Banta Publishing Co., 1916. 12mo, pp. iv+143. $1.25.

Unfair Competition. By W. H. S. STEVENS. Chicago: University of Chicago Press, 1917. 12mo, pp. xiii+265. $1.50 net.

The publication of these two books, both of which deal with the subject of unfair competition, is a hopeful sign that this rather neglected topic is beginning to receive the attention its importance warrants. It is interesting, too, that one of the authors approaches the question from the point of view of a person trained in philosophy while the other is an economist.

The former, in *The Morals of Monopoly and Competition*, is primarily concerned in describing the evolution now taking place in the business world, "one of the outstanding features of which is the change from private and competitive morality to public and co-operative morality." He first attempts to explain why private competitive morality has been found unsatisfactory, by a detailed account of its results under the practice of railroad discriminations in the case of the Standard Oil Company. Secondly, he describes the solutions proposed as evolved in the court decisions concerning railroad rebates and a fair rate of return for public-service companies. Thirdly, through a criticism of these decisions, he attempts to set forth the principles established to meet the new conditions. Then, turning from public callings to private callings, he follows a similar plan in the case of the large industrial corporations. Here practically the only unfair methods of competition described are the various forms of local price discrimination employed by the Standard Oil Company, though the judicial decisions discussed deal with a great variety of practices and the general principle of freedom of trade. The general conclusion is that industrial combinations which are doing business under the law of private callings ought to be regulated under the law of public callings.

With this general conclusion many will agree. It has already been set forth by various writers, notably and by a method in many respects similar in Wyman's *Control of the Market*. But whether the conclusion

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is adequately substantiated by this discussion is less certain. In fact, the book seems to lack a clear-cut, logical, and systematic working out of the question. The difficulty apparently arises from the fact that the author is really dealing with two questions. One is whether certain practices are fair and moral; the second concerns the logical reasoning and the evolution of the moral opinions of judges as shown in their decisions as to the legality of these practices. It is in the sections dealing with the second topic that the most interesting and suggestive portions of the book are to be found. Here, notably in chap. iii, the author points out certain sources of possible error in judicial opinion, attention to which is much needed. But while a judge's decision as to what is legally right may, under certain circumstances, depend upon his ideas as to what is morally right, as is here pointed out, yet morality is not determined by these decisions. Consequently the discussion dealing with this second topic has not much bearing upon, and certainly does not answer, the question propounded by the first topic as to what forms of competition are morally right. To answer this question some ethical criterion is necessary, but the author nowhere specifically discusses this point. So far as an answer can be inferred from his statement, his condemnation of certain practices rests upon the ground that they tend to create monopoly. "The common good of the state is also materially dependent upon the prevalence of competition and the absence of monopoly," p. 49. (Cf. also statements on pp. 44, 77, 107, 142.) This underlying major premise, whether correct or not, certainly needs to be examined and justified quite as much as those premises which the author asserts (p. 118) the judges have not examined. Moreover, it is somewhat difficult to reconcile this with the general conclusion that industrial combinations should be put under the law of public callings, for that law is designed to meet a situation where monopolies are commonly admitted to be desirable. So far, then, as the question "What is unfair competition?" is concerned it does not appear from this volume that philosophy makes any contribution to the answer over and above the contribution of the economist.

Unfair Competition is an expansion of the author's two articles which originally appeared in the *Political Science Quarterly* for 1914. The new matter consists chiefly of added illustrations of cases of the different methods of unfair competition, the listing of a new heading called "Interference," and the expansion of the conclusion, where especial attention is given to the trust legislation of 1914 as it relates to this subject.

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The volume is sound and timely and is the best presentation of the topic available. The author's final test of the fairness of a given method of competition is "whether or not it restricts actually or potentially the normal operation of the law of competition with the resulting survival of efficiency," and he is consistent throughout in adhering to this. This test, broadly interpreted, is economically sound. No attempt has been made to examine into the moral basis of this criterion, doubtless with wisdom, for to attempt this would soon involve the author in the field of ethics and the entire philosophy of life. It is here, if anywhere, that the philosopher can best contribute to this problem, but unfortunately Dr. Reed made no attempt to do so. While the conclusions of Dr. Stevens appear sound, additional weight would have been given them had he tried to set forth and refute in more detail the arguments sometimes advanced to justify the various methods of competition which he condemns.

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The Financial History of Boston. By CHARLES PHILLIPS HUSE. (Harvard Economic Studies, Vol. XV.) Cambridge: Harvard University Press, 1916. 8vo, pp. 395. $2.00

This work covers the financial history of Boston from May 1, 1822, to January 31, 1909. The earlier date marks the adoption of the city charter, an event which signalized, in the legal sense, the transition from the town form of government, which had developed during the colonial period, to the modern city government. In the economic sense the transformation in the scope of governmental functions was not consummated on that date. The subsequent financial history of Boston is largely the story of the growth of the present complex administrative structure on its fiscal side.

The author divides this history into five periods, each characterized by a financial achievement of unusual significance. The periods and achievements by which they are marked are as follows: (1) "From Town to City Economy, 1822–1844"; (2) "The Building of the Waterworks, 1845–1859"; (3) "The Preservation of the Union; The Great Land and Street Improvements, 1860–1873"; (4) "The Beginning of the Park System, 1874–1886"; (5) "The Metropolitan Districts; the Subways, 1887–1908."

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The financial record for each of these periods is covered in great detail and by a quite unusual method of treatment. Every important item of receipts and expenditures is separately analyzed and explained for each period. This analysis is remarkably clear, thorough, and complete. Convenient summaries review the mass of detailed materials and assist in preserving the sense of historical continuity in the city's financial development. Naturally the financial material is given greatest emphasis, but the statistical discussion is relieved throughout by an account of the city's political and social development, and of the personalities in successive generations that have dominated its destiny.

The method of treatment has naturally led to the inclusion of much material of purely local interest; but this will doubtless prove one of the book's most interesting features, especially to those already familiar with the history of Boston. The book as a whole will be of much more than local interest, however, because of its value as a study in the evolution of the modern municipal financial structure. Among the more interesting features of this evolution, as illustrated by the history of Boston, are the following:

1. The enormous expansion of governmental functions and the resultant increase in the cost of government. Boston's geographical situation and the political conditions which have sometimes existed have contributed to this increase; but a more important cause has been the expansion of public activities as the people came to demand provision of additional services at public expense.

2. The close relation between general economic conditions and the activity in city affairs. Great forward strides during the years of general prosperity alternated with resting periods during the years of business depression.

3. The great difficulty of maintaining both a tax limit and a debt limit in the face of the steadily expanding public expenditures. In Boston the debt limit proved the weaker, and the temporary relief to the taxpayers fostered indifference to sound management of city affairs.

4. The influence of the state upon city finances in recent years. To an increasing degree the financial policy of Boston has been determined from the State House, as the city has been compelled to finance measures which have been enacted as a part of the state's program of advancement.

The careful and painstaking manner in which the financial details of the city's history have been studied gives this book an enviable distinction among municipal financial histories. This distinction is

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enhanced by the valuable interpretation of the deeper currents of public affairs, an interpretation which sets forth clearly the logic of municipal growth. The seamy side of American municipal affairs—political corruption and financial mismanagement—has been handled with severe restraint. If the author's treatment of this topic is really in the proportion that it deserves in Boston's history, then that city has been unique among American municipalities in the quality of its administration.

H. L. LUTZ

OBERLIN COLLEGE

Principles of Commerce. By HARRY GUNNISON BROWN. New York: Macmillan, 1916. 8vo, pp. iv+154+188+207. $1.50

This book is divided into three parts. Part I, "The Mechanism of Exchange," deals with money, bank credits, and foreign exchange; Part II, "Economic Advantages of Commerce," deals with the gains of trade, the rate of interchange of goods between communities, and with the advantages, and more especially the disadvantages, of tariffs, bounties, and governmental attempts to aid or to interfere with transportation, such as subsidies, navigation laws, harbor improvements, etc.; Part III deals with the problems of the determination of transportation rates.

The author states that his purpose is "to present a theory of commerce in its several more important aspects, while yet so emphasizing the relations of the different branches of the subject to each other as to give unity to the whole."

Why the above fragmentary subject-matter should be called a theory of commerce, or what unity underlies it which even justifies its inclusion in a single volume, is impossible to see. The topics selected for the most part do not even constitute the most important topics in a theory of commerce. Such a theory could not dispense with a discussion of the operation of supply and demand, back to which so many commercial phenomena may be traced; of the nature and significance of the middleman's functions; of the commercial theory of value; of the nature of commercial organization, the factors lying behind it, its relations to industrial organization, the concept of the market, various kinds of markets and their theoretical significance, the various types of trading and their significance. Although space is found for one hundred pages of detailed description of foreign-exchange practice and phenomena, and for a chapter on navigation laws, ship and railroad subsidies, harbor improvements, etc., none of the fundamental topics in

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the theory of commerce, mentioned above, are touched upon, except certain aspects of the operation of supply and demand.

The subject-matter of the book does not appear to constitute even one of the natural subdivisions of the general subject of commerce, with an inherent unity entitling it to be set off for separate consideration. Between some of the subjects in the first and second parts an intimate relation does exist which the author has commendably developed—for example the dependence of an understanding of the rate of the interchange of goods, of the effects of tariffs, particularly protective tariffs, and of bounties, upon an understanding of the laws of money and to a less extent of foreign exchange. Even this intimate relationship, however, does not constitute the subjects a single topic. Between the last chapter of the second part, the entire third part, and the remainder of the book, there is no peculiarly intimate relationship. What unusually close relationship exists between the subject of railroad rates on the one hand and of foreign exchange or the laws of money on the other hand, or between ship subsidies or harbor improvements and bank credits, which constitute them parts of a single subdivision of the general subject of commerce?

The book is commendable for its clearness and conciseness of style. Individually and internally considered, the treatment of the specific topics is good. There is some lack of balance in the weight accorded the topics; for example, the hundred pages devoted to a detailed discussion of foreign exchange in contrast with twenty-five each to the laws of money and bank credits.

All in all the separate fragments of the book have many commendable features, but the book as a whole is hardly more than a collection of fragments—it has no central dominating topic. Most emphatically it is not a statement of "a theory of commerce."

SUMNER H. SLICHTER

UNIVERSITY OF CHICAGO

A History of Manufactures in the United States, 1607–1860. By VICTOR S. CLARK. Washington: Carnegie Institute, 1916. 8vo, pp. xii+675, 14 plates and charts. Unbound, $6.00; cloth, $6.50.

A large mass of detailed facts has been diligently assembled from many more or less obscure sources for this book. The subject is treated broadly with consideration of numerous factors, such as natural resources,

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commerce, and currency, which have affected the growth of manufactures in the United States. The chief contribution of the work, nevertheless, is in details rather than in principles.

Some conclusions, those regarding the effects of the British colonial policy for example, have been stated more convincingly by others. There is a lengthy, commonplace discussion of the tariff, which makes no notable contribution and does not recognize so relevant a point as the evolution of the "full dinner pail" argument for protection.

Numerous conclusions of broad significance are imperfectly stated. On p. 8 it is said: "Throughout this period [colonial] we shall find two dominant influences controlling the development of manufactures in America: natural resources and markets." On p. 158 the influence of labor conditions is mentioned "as the most marked symptom of the complex of economic conditions that discouraged manufactures in America"; labor conditions surely deserve as much prominence as any other factor. This is but one instance of piece-meal presentation of co-ordinate elements. The significance of the uniformity of demand, resulting from the dominance of frontier conditions, is referred to casually in several places, but its full bearing is nowhere summarized. In the section on "Profits and Interest" (pp. 147–51), mercantile gross profits, manufacturers' profits, and interest are mingled in a confusing way.

Not all of the generalizations are substantiated. For example: "Manufacturing came to be associated in the eyes of the colonists with poverty" (p. 155); and, "The artisan who manufactured goods for sale occupied a higher industrial status than the mechanic who made goods to order" (p. 163). These are far more important statements, if true, than numerous others which are elaborated upon at length.

The allotment of space and the distribution of emphasis are open to serious criticism. Over one-fourth of the volume is taken up with the discussion of foreign influences and domestic legislation, whereas the influence of canals and steamboats upon manufactures is summarized in four and one-half pages. Whiskey distilling is given more space than flour milling. For the period 1790–1860 over three times as much space is devoted to geographical distribution and volume of manufactures as to organization.

The history of the development of industrial organization is inadequate. The handicraft system, under which the workers produced for sale, and the putting-out system, under which they worked on materials furnished them by a merchant or manufacturer, are clearly distinguished only at a late point in the book (p. 440), and the reasons for the devel-

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opment of the putting-out system are not plainly shown. The section on the factory system (pp. 448–55) is incomplete; it does not give a clear-cut summary of the economies of the factory or of the forces which brought about its development. These economies and forces are mentioned elsewhere at scattered points, to be sure, but it is necessary for the reader to pick them out and piece them together. Since the book was apparently written to trace the volume of growth rather than to analyze the causes for the development of new forms of industrial organization, one ends a critical reading of the volume with a feeling of uncertainty as to how much valuable evidence on the latter subject may have been overlooked.

MELVIN T. COPELAND

HARVARD UNIVERSITY

The Chartist Movement in Its Social and Economic Aspects. By FRANK F. ROSENBLATT. (Columbia University Studies, LXXIII, No. 1.) New York: Longmans, Green, & Co., 1916. 8vo, pp. 248. $2.00.

The Decline of the Chartist Movement. By PRESTON WILLIAM SLOSSON. (Columbia University Studies, LXXIII, No. 2.) New York: Longmans, Green, & Co., 1916. 8vo, pp. 216. $2.00.

Chartism and the Churches. By HAROLD U. FAULKNER. (Columbia University Studies, LXXIII, No. 3.) New York: Longmans, Green, & Co., 1916. 8vo, pp. 152. $1.25.

These three volumes will greatly interest students of later movements. The first volume, which is introductory, summarizes the English radical movements previous to Chartism from the beginning of the last quarter of the eighteenth century, describes in detail the economic and political situation in England at the time of the origin of Chartism, sketches the careers, personalities, and beliefs of the leaders of the movement, traces its emergence from the existing political and economic conditions and its development until the end of the Newport riot in November, 1839. The war has delayed the completion of this study for the subsequent period.

Mr. Slosson's volume falls into two parts: the first, a narrative beginning with the second period of great activity in 1842 and covering the third period of great activity in 1848 and the final decline; the second, an analysis of the causes of the movement's decline and of its influence upon the ruling and the working classes.

Mr. Faulkner's volume is devoted largely to the attitude of Chartism toward Christianity and the churches and of the churches toward Chartism.

The Chartist movement illustrates strikingly labor's tendency to adopt political methods in times of depression and economic methods in times of

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prosperity. The movement was due primarily to the depressed condition of England in the later thirty's and to the new poor-law which accentuated the distress. Its decline was due largely to the return of prosperity. The relation of the movement to industrial depression is analyzed ably and in detail by both Mr. Rosenblatt and Mr. Slosson. This analysis is by far the most satisfactory feature of their works.

Chartism suffered severely from dissensions among its leaders—an ailment to which extreme movements seem particularly susceptible. Radical opinions appear to carry with them an intolerance which renders co-operation difficult. Mr. Rosenblatt's and Mr. Slosson's accounts of the conflict among Chartist leaders over objects, methods, and personalities throw interesting side lights on this ailment of radical movements.

Occurring when England was passing from a predominantly agricultural to a predominantly industrial state, Chartism contained leaders who found the remedy for social ills in agricultural reform and those who found it in industrial reform, those who sought an ideal agricultural state and those who sought an ideal industrial state. Mr. Rosenblatt and Mr. Slosson point out this division among the leaders, but do not analyze it so fully as it deserves.

Mr. Slosson's analysis of the effect of Chartism, first, upon the upper classes, and particularly upon the attitude of the two great parties toward political and social reform, and second, upon the working classes, is very brief and general. An adequate treatment of this important subject would require much more than the small space he devotes to it.

Mr. Faulkner's analysis of the attitudes of the Chartist leaders toward the churches and of the churches toward Chartism contributes interesting material to the history of the relations between radical reformers and the churches. It illustrates vividly the gulf between those whose main interest was radical schemes of reform and those whose main interest was religion. Mr. Faulkner's study fails to indicate what, if any, influence Chartism exerted upon the churches' subsequent attitude toward political and social reform.

The authors of each of these works acknowledge their indebtedness for the use of Professor Seligman's collection of Chartist literature and documents.

The Rise of Ecclesiastical Control in Quebec. By WALTER ALEXANDER RIDDELL. (Columbia University Studies, LXXIV, No. 1.) New York: Longmans, Green, & Co., 1916. 8vo, pp. 196. $1.75.

This book tells how the economic, ethnic, and political conditions which have prevailed in the province of Quebec led up to and made possible the strategic position of the Roman Catholic church in Canada. The aim of the author, to use his own words, is "to present sufficient source material to afford the general reader a basis upon which to form an adequate judgment of the sociological and historical origins in Quebec which have been responsible in a

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large part for the present racial situation in Canada as a whole . . . . and to show their relation to the growth of the church itself. . . . ."

The work is divided into two parts. Part I explains the manner in which the social phenomena furnished the foundation upon which the church erected its superstructure of control. In chap. ii, entitled "Demographic Factors Affecting the Homogeneity of the Population of Quebec," the writer shows in a clear manner how the factors of natural environment, the aggregation and composition of the population, together with the source of subsistence, operated to create a single homogeneous type of people. In chap. iii the facts of industry, language, and other social phenomena are so treated as to indicate their influence upon the same fundamental social process, namely, the production of homogeneity and mental and moral solidarity, a situation which reacted favorably to the rise of ecclesiastical control.

In Part II the writer relates the history of the conflict between the church and state, the story being based on the underlying explanation given in Part I. The outstanding feature of the story is the fact of the decline of the power of the church under the French régime and the reversal of this state of affairs under the British. Owing to the increased emphasis placed by Colbert and the administrators who followed him on the economic interests of the colony, and to the assertion of the king's supremacy in temporal matters, the church in the early period declined in power down to the time of the British conquest. The attempt of the English to assimilate the French Canadians, to administer a new legal code, and to establish the Church of England aroused the antagonism of the people; the clergy seized upon the opportunity and championed the rights of the people against their new rulers. The concessions which were made to the clergy and the people in the Constitutional Act, the separation of the province, and the granting of the franchise were the final acts which gave the church the supreme position which it now holds.

This book throws much light on the present socio-political situation in Canada. The barrier that has grown up between the English- and French-speaking people, largely through the instrumentality of the church, promises to be one of the most serious control problems which the dominion government has to face.

Factory Accounting. By FRANK E. WEBNER. Chicago: LaSalle Extension University, 1917. 8vo, pp. xii+340. $2.75.

Though published as a textbook of the LaSalle Extension University, this work is intended by the author to be of use to manufacturers and accountants as well as to students. It endeavors to cover a broader field than cost accounting; and in working out the factory accounting technique it deals quite as much with matters of production control as with accounting. By devoting several chapters to describing types of organization, the work performs a

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service for industrial accounting in that it throws some emphasis on the necessity of adapting the accounting scheme to each particular case. Even more might have been done by an adequate correlation of the different parts of the book. For, while production-control forms are constantly used to illustrate the text, and the preface of the volume states that "the large and complex industrial units require, not only *accurate* accounting, but also *economical* accounting," the significance of these things is minimized by the author's failure to emphasize properly the fact that economical accounting is best secured by making accounting data the by-product of production-control forms. The "how" of collecting data is well shown, but the "why" is for the most part neglected.

Four distinct parts comprise the volume. In the first a brief descriptive survey of the different types of management is given. The second deals with the controlling accounts, the general exhibits and the relation of cost accounts to the general exhibit. It contains also chapters on specific order and process production, and on different methods of concentrating their principal characteristics for effective handling. Some of these schemes deal mainly with the distribution of manufacturing costs over product, others with planning and scheduling. The third part is a short chapter describing the different types of industries, classed according to production methods. The fourth part describes methods of collecting data concerning materials, labor, and expense, and of handling these accounts.

The unique position of the book in the range of accounting texts is attained by virtue of the fact that, while attempting to set forth a greater range of matter than comes within the sphere of technical cost accounting, the author deals carefully and in detail with the devices and methods of discovering and recording production facts. Charts and forms are used in great profusion to illustrate the text, and some attention is given to the use of mechanical contrivances in caring for detail. In this way one of the main purposes of the book is accomplished, namely, description of the recently developed technique of factory accounting.

A History of the Third French Republic. By C. H. C. WRIGHT. Boston: Houghton, Mifflin & Co., 1916. 8vo, pp. 206. $1.50.

We have here a simple and general account of the political history of France from the time when the brutal and unscrupulous Bismarck brought on the Franco-Prussian War to the year 1914. To the economist there is very little of interest. If one holds that any history is superficial which does not unfold the economic causes at work, then we must class this volume as superficial.

Nevertheless, the author shows the relation between the sensational failure of the *Union générale* which brought on the crisis of 1882 and the anti-Semitic agitation. He points out that this great bank was the Catholic rival of the

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Rothschilds. But of the momentous copper speculation which brought on the crisis, not a word. Also, he faintly refers (p. 172) to the withdrawal of French funds from German banks which threatened Germany with a financial crisis in 1911, and led to Germany's giving way on Morocco in return for the Cameroons; but he throws no light on the unsound and extended condition of credit in Germany which made her so vulnerable at that time. Again, while showing the general and external political activities of the Socialists and Syndicalists (p. 177), he tells us little or nothing of the nature and development of the socialistic forces which have fairly dominated French administration. Likewise, very perfunctory is the brief reference to the payment of the indemnity by Thiers (p. 42), but not a word as to the most remarkable exchange operations in all history. Such things seem to be outside the purpose of the author.

Viewed solely as a general account of the main political events in the administrations of Thiers, MacMahon, Grévy, Sadi Carnot, Casimir-Périer, Loubet, Fallières, and Poincaré, the book is a convenient *vade mecum*. The weakened condition of the French Empire that gave opportunity for the initial step in the bullying, aggressive Prussianizing of Europe which has reached its climax—and we hope its check—in the European war of today (pp. 5–10) is clearly expressed.

L.

Cost Accounting and Burden Application. By CLINTON H. SCOVELL. New York: D. Appleton & Co., 1916. 8vo, pp. x+328. $2.00.

This book is written closely around the idea of the production center as the proper unit for the distribution of manufacturing burden. A large part of the book is an explanation of the manner in which taxes, insurance, depreciation, rent, repairs, indirect labor, supplies, power, and general expenses may be distributed among the various production centers. Prime cost, however, is not slighted. The principles to be observed in handling and assembling both material and labor costs are stated clearly and thoroughly.

A noteworthy characteristic of this book, written by a practicing accountant, is the emphasis laid upon principles rather than upon specific methods. The entire book deals with principles and lays down general lines of procedure, and at no point are accounting forms, concrete illustrations, or specific methods set forth. This characteristic, even though it leads at times to vagueness of statement and certainly debars the book from any claim to being a complete guide to cost accounting, is not at all displeasing to the reader. In connection with the clear and simple style it goes far toward freeing the book from the monotony which seems so inseparable from works upon cost accounting.

Closely related to the absence of accounting forms is the lack of any adequate presentation of the relations between cost accounting and the general accounting system of the business making use of cost accounts. The book falls

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short of establishing completeness as a treatise on cost accounting by reason of the conscious emphasis upon the order method of production and the corresponding neglect of the process method and of the so-called continuous industries.

The book contains particularly good chapters upon unearned burden, interest as an element of cost, the verification of burden estimates, and the budget system. Foundry, textile, candy, and paper manufacturing costs systems are discussed in supplementary chapters.

Retail Store Management. By PAUL H. NYSTROM. Chicago: LaSalle Extension University, 1917. 8vo, pp. viii+238. Index. $2.00.

This book is intended primarily as a textbook for students of the retailing process, and is general in character rather than descriptive of technical matters. The chief merchandising problems are presented clearly and concisely. The author realizes the need of giving to those engaged in retail businesses a broad view of the field, in order to counteract the narrowing tendencies of intensive routine work. The necessary theoretical matter is presented by means of illustrations taken from actual experiences of merchants. Reality without minute detail is the spirit of the work.

Particular forms of retailing—chain stores, department stores, and so on—are not mentioned in the treatise. Location, organization, accounting, buying, sales, and pricing, the factors whose management means success or failure in any retail establishment, large or small, receive thorough treatment. House policies, especially with reference to direct dealings with customers and employees, are commented on. Several of the merchandising functions are illustrated by simple, well-organized charts, and a few carefully selected forms give hints of possible methods for controlling the work of the different functions.

Lectures and Addresses on the Negro in the South. (Publications of the University of Virginia—Phelps-Stokes Fellowship Papers.) Charlottesville, Va.: The Michie Co., 1915. 8vo, pp. 128.

This volume contains a series of lectures on the negro problem, delivered by various students of the South at the University of Virginia in 1915. The phases of the problem as presented are various and the suggestions numerous. The chief value of the work lies in the breadth of view presented and also in the fact that it voices the sentiments of the southern leaders upon whom the solution finally rests. The main topics touched upon are: land tenure, ownership, and segregation; education; negro criminalogy; race relationship; public-health aspects; the church problem, and others. Not all of the lectures are of equal value. Some of them contain errors of fact and of judgment; some are of not more than passing importance. However, on the whole they are readable, and those entering into the study for the first time will find many valuable suggestions.

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JULY 1917

The War and Women's Work in England *Edith Abbott* 641

The Uniform Bill of Lading *C. S. Duncan* 679

Medical Benefits under Workmen's Compensation. II *I. M. Rubinow* 704

Notes 742

Washington Notes: 742

Completion of the New Loan—Amendments to Federal Reserve Act—Trust Powers of National Banks.

Book Reviews and Notices 748

HUNTINGTON'S *Civilization and Climate* (Walter S. Tower), 748.—MONTAGUE'S *Business Competition and the Law* (Eliot Jones), 751.—ARONOVICI'S *The Social Survey;* HARRISON'S *Community Action through Surveys* (Robert E. Park), 752.—MILLER'S *A Financial History of Texas*, 754.—STETSON, BYRNE, CRAVATH, WICKERSHAM, MONTAGUE, COLEMAN, GUTHRIE'S *Some Legal Phases of Corporate Financing, Reorganization and Regulation*, 756.—PUTNAM'S *The Land Credit Problem*, 757.—GRUNSKY'S *Valuation, Depreciation and Rate-Base*, 757.—BITTING'S *Rural Land Ownership among the Negroes of Virginia*, 758.—BRUCE'S *Property and Society*, 759.—ROBINSON'S *One Hundred Years of Savings Banking. Including Bibliography on Thrift*, 760.—WOLFF'S *Co-operative Credit for the United States*, 760.

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THE WAR AND WOMEN'S WORK IN ENGLAND

The effects of the war on the employment of women in any one of the countries involved can, of course, be only incompletely seen or understood at this time. In England, however, certain valuable reports already available on women's war work set forth some definite problems relating to the work of women that have arisen in the greatest industrial nation among the belligerents. The widespread depression and serious unemployment immediately after the outbreak of the war, the organization of relief work among unemployed women, the protest of the working women against the attempt to organize women of leisure to make garments for soldiers, the opposition to the women's war register in the spring of 1915, the gradual expansion of the new demand for women's labor, particularly in the munitions trades, the effect of the Munitions act on women's employment, the readjustment of trade-union rules, the suspension of protective legislation, and the results of this suspension—these problems are of interest to us now in the United States, since it is possible that we may have similar issues to face in the not-distant future.

This article must necessarily be confined to a discussion of the war in relation to the employment of women in industry, but the effect of war on the non-industrial employment of women may be

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discussed in a later article, together with certain general questions as to the effect of the war on the gainfully employed women of England.

IMMEDIATE EFFECT OF THE WAR ON THE STATE OF EMPLOYMENT

The immediate effect of the war on British industry was "an abrupt and considerable curtailment of production." In August, 1914, there was a great deal of unemployment and short time among both men and women. The report of the Board of Trade on conditions at this time is as follows:

> Orders both in home and foreign trade were withheld or cancelled, large numbers of factories went on short time, and in a number of cases employees were provisionally given notice of discharge. These measures were largely precautionary and were due to uncertainty as to the conditions under which trade would be carried on in war time. By September, however, it had become clearer in many industries how far markets were likely to be restricted. In a few trades employees were dismissed after being on short time for a few weeks, but in a much larger number of cases the factories resumed their normal working.[1]

Unemployment was more serious among women than among men for the following reasons: (1) The cotton trade, the greatest of the women's industries, suffered more than any other great industry in England from the first shock of the war. (2) The so-called "luxury trades" all over the country, and particularly in London, were terribly depressed as a result of the so-called "panic economy" that followed the outbreak of the war, and these were also "women's trades." In dressmaking, millinery, blousemaking, and similar trades employment was practically at a standstill; and large numbers of women clerks, domestic servants, charwomen, actresses, typists, manicurists, and other "toilet-specialty" employees were suddenly thrown out of work. (3) Working women were more adversely affected by the dislocation of trade than workingmen because the army offered an immediate alternative employment to men. The total reduction in the number of workingmen employed as between July, 1914, and October, 1914, was

[1] *Report of the Board of Trade on the State of Employment in the United Kingdom in October, 1914*, Cd. 7703, p. 15.

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10.7 per cent, which was almost precisely equal to the percentage of workingmen known to have joined the military and naval forces.

On the other hand, the mobilization not only failed to offer an immediate opening for unemployed women, but actually aggravated their plight, since the wives and other dependent women relatives of reservists and others who joined the colors went in search of work; and until the vexed question of separation allowances had been solved these soldiers' dependents increased the number of women who registered at the labor exchanges for work.

EXTENT OF UNEMPLOYMENT AMONG WOMEN

Carefully prepared reports of the Board of Trade furnish interesting data relating to the extent of unemployment after the outbreak of the war and to the gradual recovery in 1915. Table I

TABLE I

EMPLOYMENT OF WOMEN IN INDUSTRY, JULY, 1914, COMPARED WITH LATER MONTHS

	September, 1914	October, 1914	December, 1914	February, 1915
Still on full time	53.5	61.9	66.6	75.0
On overtime	2.1	5.9	10.8	10.9
On short time	36.0	26.0	19.4	12.6
Contraction of numbers employed	8.4	6.2	3.2	1.5
Employed in July, 1914	100.0	100.0	100.0	100.0

has been compiled from the three reports on the state of employment in October, 1914, December, 1914, and February, 1915,[1] to show the state of employment in industrial occupations for women during this period. The number of persons employed in July, 1914, is taken as 100.

No figures are available for August, 1914; but in September, when the improvement had set in, only 53.5 per cent of the women employed in July were still on full time, and 44.4 per cent of all the women employed in July were out of work or were working on short time. Both unemployment and short time, however, steadily

[1] Cd. 7703, Cd. 7755, and Cd. 7850.

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decreased, and the reports for October, 1914, December, 1914, and for February, 1915, show a constant improvement.

Actual numbers rather than percentages give a better idea of the effect of the depression. The estimated number of women in industry who were either unemployed or on short time was placed by the Board of Trade at nearly a million.[1]

Unemployment was much more serious in some industries than in others. The trades most affected were cotton and furniture, the latter, an important London industry, depressed in part because furniture may be classed as a "luxury trade" easily affected by any general loss of confidence and in part because of a shortage of raw materials. The following figures, published by the Board of Trade, show the extent of the contraction of employment in these two industries in October, 1914.[2]

Furniture Contraction	Cotton Contraction
21.4 per cent among males	17.1 per cent among males
12.7 per cent among females	14.2 per cent among females

In addition to this definite unemployment, short time or "concealed unemployment" was a serious matter in both industries and was especially marked in the cotton trade, where it was estimated at from 42 to 45 per cent of the women employed.

The depression in the cotton industry was more serious because of the great numbers of working women involved and because the depression was long continued. The slow recovery in the industry and the magnitude of the problem of unemployment are shown in Table II, which gives the number of weavers unemployed or on short time from October, 1914, to October, 1915.[3]

War was not the sole cause of depression in the cotton trade. Bad times had been expected in Lancashire before the war broke out, but the bad condition of things was greatly aggravated by the

[1] Data as to the employment of women in industry in September, 1914, were as follows: "Still on full time," 1,203,750; "on overtime," 47,250; "on short time," 810,000; "contraction of numbers employed," 189,000. See Cd. 7703, p. 6.

[2] *Ibid.*, p. 9.

[3] Data from the weekly returns of the Amalgamated Weavers' Association published in the *Labour Year Book*, 1916, p. 28.

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war, since the cotton trade more than any other important industry was dependent on foreign markets and was particularly affected by the various obstacles that the war placed in the way of export. The industry was also affected to some extent by lack of materials, such as dyes and colors, formerly imported.

Although in some respects the general position of the woolen and worsted trades was like that of cotton, nevertheless these trades were quite different, in that they were relieved immediately by the placing of government contracts.

TABLE II

	Approximate Number of Weavers Unemployed	Approximate Number of Weavers on Short Time		Approximate Number of Weavers Unemployed	Approximate Number of Weavers on Short Time
1914			1915		
October 17.....	49,587	66,408	January 30.....	12,370	67,250
October 24.....	53,811	68,208	February 27.....	7,902	47,580
October 31.....	51,549	79,949	March 27.....	7,053	21,429
November 7....	46,333	89,905	April 24.....	6,344	14,094
November 14....	43,522	93,618	May 22.....	7,606	11,642
November 21....	48,387	88,524	June 26.....	7,721	8,034
November 28....	44,249	86,450	July 24.....	9,248	5,655
December 26.....	26,383	71,450	August 14.....	4,396	2,945
			September 25....	16,586	4,944
			October 2.....	16,134	3,144

Table III[1] shows the percentage of unemployment in all the trades normally employing as many as 15,000 women.

This table shows at least a slight recovery in October for every trade except paper and printing and the boot and shoe trade, in which the contraction percentage had actually increased. In a number of cases the recovery was very marked. This was especially true in the woolen and worsted, hosiery and other textiles, clothing, leather (in which a contraction of 11.8 per cent had been changed to an increase of 2.0), engineering, and other metals—all trades in which the placing of orders for the outfitting of the "new army" and the production of war supplies for Great Britain and her allies had begun to take effect. The increased contraction in the boot and shoe trade indicates a lack of improvement in spite of government orders. This appears to have been due to the fact that the

[1] From Cd. 7703, p. 9.

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boot and shoe contracts did not benefit the London industry, which was chiefly engaged in "light women's wares," and neither its machinery nor skilled labor could be to any extent employed for army work. In Leicester, also, the boot and shoe industry was specialized in women's work, and it was necessary to instal heavy machinery before army contracts could be undertaken.[1] The Board

TABLE III

STATE OF EMPLOYMENT FOR WOMEN IN SEPTEMBER AND OCTOBER, 1914, COMPARED WITH JULY, 1914; NUMBER EMPLOYED IN JULY, 100

Total Groups	Approximate Number Occupied Census, 1911	Contraction of Employment	
		Percentage September, 1914	Percentage October, 1914
Total, including miscellaneous trades	2,229,000	8.4	6.2
Cotton	388,000	14.9	14.2
Woolen and worsted	144,600	4.3	1.9
Linen, jute, and hemp	107,700	1.0	0.8
Hosiery	51,900	† 0.3	† 5.2
Other textile	167,100	7.3	2.7
Clothing	808,200	8.6	5.2
Boot and shoe	50,000	0.3	1.7
Other food, etc.*	99,000	13.6	12.1
Paper and printing	122,000	4.4	6.5
Furniture, etc.	21,800	13.1	12.7
Glass, china, etc.	34,600	5.3	4.8
Leather, canvas, etc.	30,900	11.8	† 2.0
Engineering	15,700	0.5	† 2.2
Chemicals	34,100	1.1	1.0
Cutlery, wiredrawing, etc	22,600	1.4	0.6
Other metal	48,700	4.8	1.3

* Other food and tobacco trade includes bread, biscuit, cocoa, confectionery, and fruit-preserving trades; sugar and glucose, preserved-meat, pickle, sauce, and baking-powder trades; fish-curing trades; aërated waters, cider vinegar, British wine, etc.

† A † indicates the extent to which any industry has been compelled to draw in new employees.

of Trade report on the "state of employment" noted also in connection with the discussion of the effect of army contract work that the contracts given to the boot and shoe trade had affected adversely the box-making trade, a women's industry, because the boots and shoes required by the government do not need boxes; some firms were consequently at a standstill.

[1] See Cd. 7703, pp. 15 and 18.

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But, although the improvement in trade conditions brought about a gradual diminution of unemployment, some public assistance was needed in the meantime for the hundreds of thousands of women who had been suddenly thrown out of work.

THE CENTRAL COMMITTEE ON WOMEN'S EMPLOYMENT

The Central Committee on Women's Employment was appointed on August 20, 1914, by the Home Secretary, "to consider, and from time to time report upon, schemes for the provision of work for women and girls unemployed on account of the war." Among the fourteen members of the committee were five representatives of working women chosen by the War Emergency: Workers' National Committee; and the secretary of the committee was Miss Mary Macarthur, well known as the secretary for the Women's Trade Union League and as the chairman of the National Federation of Women Workers. It was expected, therefore, that the interests of the working women would be adequately protected in the work of this committee.

Some ill feeling had been aroused through the formation, immediately after the outbreak of hostilities, of Queen Mary's Needlework Guild, which was to supply articles for the troops by the volunteer work of leisure-class women. This plan met with vigorous opposition from the working women's organizations on the ground that the already serious unemployment among women would probably become worse if any national scheme were promoted to supplant paid workers by volunteers.

Opposition to this scheme also came from the newly formed War Emergency: Workers' National Committee. This organization grew out of a conference of representatives of labor organizations which was called August 5, 1914, "to consider the industrial and social position of the working classes as affected by the war." The executive committee included representatives of several well-known women's organizations, among these Miss Mary Macarthur (Women's Trade Union League), Miss Margaret Bondfield (Women's Cooperative Guild), Dr. Marion Phillips (Women's Labour League), and Miss Susan Lawrence (London County Council). This committee took a firm stand in opposition to the appeals which were

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being sent out urging women to volunteer for work rendered necessary by the war when more than half a million women were out of employment, and their protests were quickly effective. On August 17 the following official announcement, which was given to the newspapers, indicated that the Queen Mary's Guild scheme had been modified in order to safeguard the interest of the women whose only asset was their labor power:

> There has been evident misunderstanding concerning the aims of the Queen's Needlework Guild, some people feeling alarmed at the possibility that the enlistment of the voluntary aid of women workers would tend to restrict the employment of other women in dire need of paid work. Voluntary aid was meant to supplement and not to supplant paid labour, and one of the Queen's very first cares when the Guild appeal was decided upon was to avoid the infliction of any hardships. The matter has been under earnest consideration ever since, and the announcement that representatives of working women will be called into consultation provides a guarantee that everything possible will be done to safeguard the interests of women workers.[1]

With public attention thus called to the suffering among unemployed women, particularly in London, the "Queen's Work for Women Fund" was started, and money was turned over to the Central Committee on Women's Employment to provide work or assistance in some form of work for women who were unemployed and destitute.

The work of the Central Committee[2] was divided into two quite distinct branches:

1. Relief work to provide for women who were unemployed on account of the war.

2. Work tending to diminish unemployment among women by "assisting the proper distribution of work available for women in ordinary industry" and by finding new employments for skilled women workers displaced owing to the war.

RELIEF WORK OF THE CENTRAL COMMITTEE

The committee decided that no plans for relief work should be accepted unless two important principles were observed: (1) the

[1] *The Labour Year Book*, 1916, p. 80.

[2] See the *Interim Report of the Central Committee on Women's Employment*, 1915 (Cd. 7848).

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product of relief workshops must not compete in any way with ordinary industry; (2) the work must be of such a nature as to maintain and, if possible, to improve the efficiency of the women employed. In the report of the committee's work it is made clear that the first point related to the method of distributing the output of the workroom rather than to the nature of the work. The necessity of avoiding competition, direct or indirect, with normal trade was emphasized; stress was laid, not only on the fact that the articles made should not be offered for sale, but also on the fact that they should not even be distributed free to persons with purchasing power. It is of interest to observe that the committee reported that difficulty had been experienced "in enforcing this principle, chiefly owing to the desire of the local committees to make articles for the troops."

With regard to the second point—that the work should be of educational value—the committee instructed the local committees that the object of combining relief with schemes of work was not merely to avoid the dangers which attend relief through doles, but also to afford an opportunity of maintaining or of definitely increasing the efficiency of the girls and women concerned.[1]

The vexed question of the wages to be paid in the local workrooms was not easily disposed of. The minimum rate fixed was 3 pence an hour for women over eighteen, and 10 shillings as the maximum relief allowed in the form of wages or maintenance. The committee gave the following reasons for the adoption of this rate:

In determining the minimum rate for relief work the Committee did not intend to imply any expression of opinion as to what should or should not be regarded as a fair rate in ordinary economic undertakings. But it was necessary to have some regard to the rate normally paid to the majority of women with whom it would be necessary to deal. It was felt undesirable to fix wages either so high as to attract from ordinary employment or else so low as to fall below the barest subsistence level. The Committee had the difficult task of striking a fair mean between these two extremes. Many women workers are

[1] Thus the committee says that "work . . . . which will tend to develop ingenuity and a certain amount of taste . . . . is preferable to a merely mechanical production of stock articles; and especially with the work of teachable women it is worth while to be content with a smaller number of finished articles if the women can be induced to take a pride in their work" (Cd. 7848, p. 10).

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normally in receipt of wages below a subsistence level, and in many trades a lower minimum than 3 pence an hour is paid. In other trades the recognized hourly rate is more than double this amount.

Due consideration was also given to the minimum rates laid down by the various trade boards. None of these rates apply to any of the work done in relief workrooms, but they may be taken roughly as an indication of the lines below which in the public interest wages under any circumstances should not be allowed to drop. In two small localized trades minimum rates of 2¾ pence an hour have been fixed, but the lowest minimum so far determined by a trade board for a trade of any magnitude had been 3 pence, which was fixed in the case of the paper-box trade board, and has also been proposed as a minimum for the food-preserving and sugar-confectionery trade. In the skilled trade of men's tailoring it is proposed to revise the original rate of 3¼ pence for women, and 3½ pence has been fixed by the shirtmaking board.

The articles made in the workrooms were distributed free either through charitable organizations or directly through the local committees. The main work done was the making of various kinds of clothing. Maternity outfits were distributed through maternity centers and schools for mothers. Children's clothing was given to the school "Care Committees," and large parcels of clothing were used for Belgian refugees in England or on the Continent or were given for distribution among the destitute in the devastated regions of France.

OTHER WORK OF THE CENTRAL COMMITTEE

The relief work of the Central Committee on Women's Employment was much less important than the efforts made to get the unemployed women back into the regular labor market. In its *Interim Report* the committee states emphatically that throughout its operations its members have "realized that it is better that workers should be self-maintaining than dependent on relief, even when that relief is given in the form of work." As the committee saw it, there was a tremendous dislocation of industry with unprecedented slackness in one trade and an almost equivalent overpressure in other trades; and its problem was one of assisting in the transfer or adaptation of unemployed workers and firms to new and imperative national needs.

The work of the committee in this problem of readjustment was of two kinds: (1) assisting firms unused to government work to

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undertake War Office contracts for the making of army clothing, khaki cloth, blankets, and hosiery; (2) taking army contracts directly and distributing the work to firms that were too small to obtain such contracts themselves.

A brief account of these two branches of the committee's work may be of interest. One of the first steps in the problem of readjustment was the discovery that in the men's clothing industry, in which there was a great deal of unemployment, very few of the wholesale clothing firms were accustomed to the making of army garments and that the existing models of army service dress presented so many technical difficulties that it was almost impossible for the inexperienced firms to undertake contracts for such clothing. The committee secured an interview at the War Office and suggested certain modifications in the regulation army dress, which were immediately approved. The result was that the manufacturing difficulties were removed, full employment in the tailoring trade began at once, and the Army Supply Department was also greatly benefited by the prompt fulfilment of orders.

In shirtmaking there was no such problem, but there was a great deal of unemployment because firms did not know how to secure War Office contracts. The *Interim Report* points out that "here, the function of the Committee, acting on reports from the Intelligence Department of the Local Government Board, or on information forwarded by local authorities, was to advise firms requiring work to apply to the War Office for a contract, or, alternatively, application was made on the firm's behalf." A typical instance of such action may be quoted:

> A letter received in September from the Wiltshire County Council drew attention to the unemployment of certain shirt workers in the county, and on inquiry it appeared that other workers engaged in the London factories of the same firm were also without work. The firm was therefore interviewed, and being found capable of executing Government orders on a considerable scale, was brought to the notice of the War Office, on whose contracts their workers, both in London and in the provinces, have since been continuously engaged.[1]

Similar action was taken in behalf of the workers in certain other trades; and the problem of supplying khaki cloth, blankets, and

[1] *Interim Report* (Cd. 7848, p. 5).

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various kinds of hosiery was greatly simplified by the work of the committee.

Immediate assistance in the form of work other than relief work was given in the form of an order placed by the Queen with the committee for 75,000 woolen body belts, to form part of the Queen's gift to the troops. The committee was able through this order to assist the carpet trade, which was greatly depressed on the outbreak of the war. The yarn for the belts was obtained from firms previously engaged in producing carpet yarn, and in the actual making of the belts employment was provided for a considerable number of women in Kidderminster, Belfast, and elsewhere.

An interesting example of the kind of readjustment that was brought about is that of a great London dressmaker who employed upward of one hundred women and whose business was entirely ruined by the war. This dressmaker asked to be given a contract to supply some of the belts for the Queen's gift, and a contract of £1,500 was given her. She purchased the necessary machinery and yarn and trained her staff for a new occupation. She carried out the contract successfully and has since been engaged on army hosiery contracts which keep her entire staff fully employed.

The part of the committee's work which meant the undertaking of contracts to be afterward sublet is also of interest. The committee wished to find some method of assisting the great number of firms engaged in dressmaking and other needlework trades that were so severely injured by the "panic economy" following the outbreak of the war that they were faced with the prospect of entirely giving up their businesses. These firms were in general too small or were possessed of too little equipment and experience to make War Office contracts themselves. But it was possible to obtain work for them if a central body should take action on their behalf. The Central Committee on Women's Employment therefore undertook the contracts and arranged also to supply expert advice, to pay promptly for the work done, and to undertake such services and such processes of manufacture as the firms were unable economically to provide for themselves. With these objects in view the committee undertook the following contracts:

a) Twenty thousand army shirts which had been cut out by the Army Clothing Department to be made up. These were

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distributed to a large number of firms having from two or three up to a hundred employees, and the committee afterward collected, examined, and returned the made-up shirts to the Royal Army Clothing Department. So inexperienced were the firms employed on this contract that in some cases 50 per cent of the shirts made had to be corrected before they could be sent to the government, but the standard of work improved rapidly under the direction of the expert supervisors employed by the committee.

b) Ten thousand shirts a week to be supplied after the order given above had been completed. The Army Clothing Department was no longer able to do the cutting out of the shirts, and it therefore became necessary for the committee to open a shirt-cutting workroom. This meant employment for a staff of experienced cutters, and the Shirt and Jacket Cutters' Union allowed their general secretary to become foreman cutter and supplied some of their members to work under him. Unemployed girls were engaged for the business of packing the cut-out shirts and dispatching them to the dressmaking and similar establishments where they were to be made up.

c) Other contracts included: (1) 105,000 flannel belts, which could be easily executed and were eagerly undertaken by firms engaged in any kind of needlework; and (2) 2,000,000 pairs of army socks. By means of this contract an attempt was made to assist the employees of the high-grade dressmaking firms for which there was no outlook except a continued depression of trade. It was believed that "woolen garments of simple character could, when ordered in considerable quantities," be produced by such firms. The committee undertook to supply hand knitting machines on loan, the cost to be deducted from the price for the completed articles.

Before the first of February, 1915, the committee had laid out nearly £12,600 in this work, and practically the entire sum was paid in the form of workers' wages or wages for skilled supervisors or managers.

Other branches of work undertaken by the committee are less interesting. Attention was given to the possibility of promoting new trades. The danger of starting new enterprises on unsound lines was clearly understood, and any financial help given by the

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committee toward the starting of new trades was merely in the form of advances for the payment of wages for a limited period and with the assurance that the scheme was to be managed on sound commercial lines. There was, of course, much public interest shown in the possibility of establishing in Great Britain the manufacture of articles that had been imported from Germany before the war, but the committee was rightly cautious in making experiments in this direction. "Attempts to start new enterprises on unsound lines are invariably dangerous," according to its report, "and at abnormal times they may cause serious mischief by temporarily diverting custom from usual channels and thus accentuating the dislocation of industry."

THE APPEAL TO WOMEN TO REGISTER FOR WAR WORK

Although the employment situation was greatly improved by the spring of 1915, there were thousands of unemployed women still registered for work at the Labour Exchanges when the government issued an appeal urging all women who were "prepared, if needed, to accept paid work of any kind—industrial, agricultural, clerical, etc.—to enter themselves upon the Register of Women for War Service." "The object," it was said, "is to find out what reserve force of women's labor, trained or untrained, can be available if required." Within a fortnight 33,000 women enrolled; and although 110,714 women had registered by the middle of September, employment had been found for only 5,511 of them. The whole proceeding was somewhat farcical; and it aroused a great deal of opposition among the labor groups, who held that it represented an attempt to recruit low-paid labor.

Protest against this war-registry call, for example, was expressed by the "War Emergency: Workers' National Committee" on March 18 in the form of the following resolution:

> That the Workers' National Committee has had under serious consideration the circular "War Service for Women," issued by the Board of Trade. The Committee points out that there are still 60,000 men and boys and 40,000 women and girls on the live register of the Labour Exchanges for whom the Board of Trade has so far failed to find situations or provide training whilst many thousands more are working short time. It further points out that the object of the circular appears to be specially directed to obtain women's labour

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in agriculture and that absolutely no safeguards are proposed to guarantee good conditions and fair wages. The Committee is strongly of opinion that in drafting women into any industries care must be taken to prevent the stereotyping of bad conditions and low wages or to endanger standard conditions where they obtain; that this should be secured by a tribunal representative of the organized wage-earners—men and women—and that further efforts should be made to find situations for those persons now on the register before taking steps to bring in fresh supplies of female labour.[1]

Further evidence of the way in which the women's war-service scheme was received by the public is found in an interesting manifesto issued by the Women's Freedom League, a suffragist society:

The Women's Freedom League are glad to note the tardy recognition by the Government of the value of women's work brought before the country in their scheme of war service for women. We demand from the Government, however, certain guarantees.

Firstly, that no trained woman employed in men's work be given less pay than that given to men.

Secondly, that some consideration be given when the war is over to the women who during the war have carried on this necessary work.

Thirdly, that in case of training being required proper maintenance be given to the woman or girl while that training is going on.

Recognizing that the Government's scheme offers a splendid opportunity for raising the status of women in industry, we urge that every woman should now resolutely refuse to undertake any branch of work except for equal wages with men. By accepting less than this women would be showing themselves disloyal to one another, and to the men who are serving their country in the field. These men should be certainly safeguarded on their return from any undercutting by women. Finally, seeing that the Government are now making a direct appeal to women to come forward and help in the defence of their country and that fresh responsibilities are being thrust upon them—thousands through the loss of their husbands being left to perform the duties of both father and mother—we feel that this is an opportune moment for the Government to guarantee that before they leave office they will bring before the House of Commons a measure for the political enfranchisement of women. We urge all suffragists to support us in this demand now.[2]

Opposition to the "War Registry for Women" was persistent and vociferous. The feeling was general that there was back of it a desire to get cheap labor for the farmers, who were making large profits at the time and were able to pay proper wages for work on the land. As a matter of fact, a shortage of skilled labor was

[1] *Labour Year Book*, 1916, p. 82. [2] *Ibid.*, pp. 81–82.

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becoming apparent, and the thousands of unemployed women on the Labour Exchange registries were too unskilled to meet the need. Unfortunately this was also true of the hundred thousand women who signed the war-service register.

THE INDUSTRIAL REVIVAL AND THE EXTENSION OF THE EMPLOYMENT OF WOMEN

It is of course now well known that the period of depression in England that followed the outbreak of the war gradually disappeared as industry adapted itself to new demands, and that early in the year 1915 a shortage of labor rather than unemployment had become a matter of public concern. The revival took place most promptly in the industries in which the allied governments were placing contracts for the outfitting of the new armies and the production of war supplies, especially the leather, tailoring, metal trades, chemicals and explosives, food trades, hosiery, and the woolen and worsted industries. Industrial readjustment was still in process. There were trades, like dressmaking, in which there was still a considerable amount of unemployment, but there were other trades in which there was a shortage of women workers; and on the whole it was clear that further readjustments could be made with a little time.

Many dressmakers had of course definitely settled down to the making of army clothing as a new employment; but unemployment among all workers in the sewing trades was normally relieved by the usual seasonal activity that became noticeable in the early spring of 1915.

The *Labour Gazette* contained in February, 1915, numerous examples of the kind of readjustments that were constantly being made. Thus from Bath and Portsmouth it was reported that the employees of corset factories, who had been thrown out of work at the beginning of the war, were employed in making army knapsacks. From Walsall it was reported that the lighter and less skilled branches of the leather industry had absorbed dressmakers and other unemployed women. From the East Midlands a continued depression of the lace industry was reported, and the effort to draft the lace menders into the hosiery trade had failed because

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they were found not to be adapted to the new work. It was hoped, however, that a new industry for the manufacture of tapes, braids, etc., for which lace workers were well adapted, would be started soon. In the tackle-making trade in Redditch, where there was a great deal of unemployment, girls from the hook departments were being absorbed in the manufacture of hosiery machine needles.

By April, 1915, the *Gazette* reported a shortage of female labor in some branches of the clothing trades, and in June, 1915, women were needed in excess of the available supply for many occupations. In July, 1915, the *Gazette* reported that "transference from one trade to another and the substitution of female for male labour are extending."

Early in the second year of the war the problem that had definitely shaped itself was how to extend the employment of women and meet the great shortage of skilled and unskilled labor.[1]

A valuable summary of the situation at this time is to be found in a *Report on the Replacement of Men by Women in Industry* made to the British Association for the Advancement of Science in September of 1915.[2] After twelve months of war the three features of the labor market that were said to stand out in special prominence

[1] In November, 1915, the *Labour Gazette* reported that "everyone capable of work" was said to have an opportunity of employment. "It is evident that still larger numbers of women and girls, not previously employed in trade and industry, are required in many occupations where suitable work can be found for them." Again, in December, 1915, the *Gazette* contained the following statement: "In November the shortage of skilled and unskilled labour became still more marked. To some extent women have been used to make good the deficiency, but there is room for further developments in this direction during the war. The number of women ordinarily employed is not, however, sufficient to meet all the demands of the situation created by the withdrawal of so many men from their usual occupations and by the requirements of the Forces. A new supply of labour is therefore required, which, in the present circumstances, can only be drawn from among those women who have not hitherto been engaged in industry."

[2] British Association for the Advancement of Science, Manchester, 1915. Transactions of Section F (Economic Science and Statistics). *Interim Report of the Conference to Investigate into Outlets for Labour after the War. Report on the Replacement of Men by Women in Industry*, pp. 508 ff. A later study of this subject carried on for the British Association has recently been published under the title *Labour, Finance, and the War*, by Professor A. W. Kirkaldy. The chapter dealing with the subject of the replacement of men by women has been conveniently summarized in the *Monthly Review* of the United States Bureau of Labor Statistics, March, 1917, pp. 337–47.

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were: (1) the serious shortage of skilled work people, (2) the considerable extension of women's employment, and (3) the limited extent to which women had replaced men, in the sense of doing work previously done by men.

This report emphasized the fact that valuable time had been lost through the popular belief that the war would be of short duration and through the failure to realize that experiments in the employment of women might have to be made on a considerable and unprecedented scale. The report noted that, although in a great many industries women were working in processes wholly or partially done by men, the extent to which this was being done was inconsiderable. It was added, however, that the margin of difference "between the actual fact and possibility is yet to be discovered."

The report showed that trades in industry proper in which the extension of women's employment had been most marked were engineering, chemical trades (explosives), leather work, tailoring, meat-preserving, grain-milling, basket-(shell)making, elastic webbing, scientific-instrument making, brushmaking, electrical engineering, canvas sack- and net-making, leather-tanning, rubber work, hosiery, hardware, wiredrawing, tobacco, boot and shoe trade, shirtmaking, wool and worsted, silk and jute trade. It appeared, however, that only a small proportion of the extra women employed in these trades were doing men's work. The fact that fewer men and many more women were employed had led to the belief that women were replacing men, but the report showed that this was actually happening only "in special instances and to a limited degree." As a matter of fact, the war demand had to a large extent been for goods in which a larger proportion of women than men were normally employed. For example, army clothing is of the kind made "in the medium branches of the trade in which female labour normally predominates. This part of the trade has drawn women and girls from its other branches and from its fringe of casual labour as well as from other trades in which there is a surplus of female labour." The high-class custom branch of the tailoring industry which employs men almost entirely had been greatly depressed since the outbreak of the war; and the great increase

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in the number of women in the tailoring trade was not for work that had formerly been "men's work," but for an unusual expansion in the women's branch of the trade. Similarly, the report shows that the cloth for the making of uniforms was not the finest suiting on which a proportionately high number of men had been employed; and the war demands on the woolen and worsted trade had again been in those branches in which a larger number of women than men are employed under normal conditions.[1]

That the old lines of demarcation between men's work and women's work were passing was clear, however, in many places. Although women were not undertaking highly skilled jobs, they were said to be gradually finding their way into processes "which were previously thought just above the line of their strength and skill. This is seen particularly in leather, engineering, and the wool and worsted trade, and also in trades which, though depressed during the war, have yet experienced a shortage of certain forms of labour, e.g., pottery, cotton, and the printing trades. This shifting line of demarcation between men's and women's jobs has in many cases received trade-union opposition, though in most cases agreements have been made for the duration of the war only and without prejudice to the consideration of the question after the war."

Since the preparation of the report of the British Association there appears to have been a great acceleration of the movement toward the replacement of men by women in occupations not customarily entered by women before the war.

An official appeal to employers signed by the Home Secretary and by the President of the Board of Trade was published in the *Labour Gazette* as early as March, 1916, calling attention to the great importance of maintaining the manufacturing industries of the country in full vigor. The appeal comments on the complaints of the shortage of labor and continues as follows:

> There is one source and one only from which the shortage can be made good—that is, the great body of women who are at present unoccupied or engaged only in work not of an essential character. Many of these women have worked in factories and have already had industrial training—they form an asset of immense importance to the country at the present time, and every

[1] *Report on the Replacement of Men by Women in Industry*, p. 510.

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effort must be made to induce those who are able to come to the assistance of the country in this crisis. Previous training, however, is not essential; since the outbreak of war women have given ample proof of their ability to fill up the gaps in the ranks of industry and to undertake work hitherto regarded as men's.

Every employer is appealed to, not to diminish productivity, but to make every possible effort to maintain his production by using women, whether in direct substitution for the men who have been withdrawn or by some subdivision or rearrangement of his work.

TABLE IV

Industrial Occupations	Percentage of Firms Reporting Shortage of Female Labour		Increase or Decrease in the Number of Women Employed, Compared with July, 1914
	July, 1916	October, 1916	
Metal trades	5	5	+227,000
Chemical trades	2	3	+ 38,000
Textile trades	38	40	+ 33,000
Clothing trades	20	21	− 12,000
Food trades	6	7	+ 42,000
Paper and printing	17	19	− 5,000
Wood trades	4	8	+ 16,000
All industrial firms making returns, including some in occupations not specified above	9	10	+393,000

Statistics published in the *Labour Gazette* show curiously enough that in the summer and autumn of 1916 the shortage of women's labor was most general in the clothing and textile industries, which are regarded as the typical women's trades. Table IV shows the percentage of firms in different industries reporting a shortage of female labor. The table was based on the answers obtained through replies made by employers as to whether they were able to obtain all the women employees they desired, and it is explained that a "shortage" was frequently reported when skilled workers were needed and only unskilled or inexperienced women were available.[1]

This table indicates that an interesting movement had been in progress transferring the supply of women's labor from the old

[1] See *Labour Gazette*, January, 1917.

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traditional women's trades to the munitions industries and other trades in which higher earnings are probably available during the war. In the clothing trades as a whole there has been a decline in the demand for labor during the war period; but the supply has evidently, by transference to better-paid work, decreased more than the demand.

The extent to which women's labor had been utilized for "men's work" and the need for a still greater extension of women's employment was presented officially by the War Office by the issuing of an illustrated octavo volume in September, 1916, entitled *Women's War Work*. The book was issued, in the words of the preface, because it was believed that a more widespread knowledge of the success which had been attained by women in nearly all branches of men's work was most desirable and would lead to the release to the colors of large numbers of men who had hitherto been considered indispensable.

A further extract from the preface is of interest:

> Employers who have met the new conditions with patience and foresight readily admit that the results achieved by the temporary employment of Women far exceed their original estimates, and even so are capable of much further extension. If this is true in their case, how much greater must be the scope for such substitution by those Employers who have not attempted it from reasons of apprehension or possibly prejudice? The necessity of replacing wastage in our Armies will eventually compel the release of all men who can be replaced by women, and it is therefore in the interests of Employers to secure and train temporary substitutes as early as possible, in order to avoid any falling off in production.

The organized official attempt to replace male by female labor is still going on, and the Board of Trade has now in process of publication a series of pamphlets setting forth the methods of utilizing women's labor in the various trades.[1]

EXTENSION OF WOMEN'S EMPLOYMENT IN THE MUNITION TRADES

The largest and most spectacular extension of women's employment has been in the engineering and allied trades engaged in the production of munitions of war. As early as February, 1915, a special committee was created, with Sir George Askwith, of the

[1] See the *Labour Gazette*, March and April, 1917.

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Board of Trade, as chairman, to report on the steps that might be taken to make the productive power of the employees in engineering and shipbuilding establishments fully available to meet the needs of the nation in the war emergency. This committee presented a first interim report on February 16 and a second interim report on February 20. The latter report dealt with the production of shells and fuses and contained the following recommendation:

> We are satisfied that, in the production of shells and fuses, there are numerous operations of a nature that can be, and are already in some shops, suitably performed by female labor. We therefore recommend that, in order to increase the output, there should be an extension of the practice of employing female labor on this work, under suitable and proper conditions.[1]

A third interim report (March 4, 1915) dealt with "Demarcation of Work" and emphasized the urgent necessity of relaxing "existing demarcation restrictions" and the extension of the use of semi-skilled or unskilled labor when the necessary skilled labor could not be obtained.

Such data as are available show that a very considerable increase in the employment of women in the engineering trades had taken place even before the government undertook by special efforts to recruit women munition makers. Thus the estimate of the Board of Trade as to the change in the employment of women and men in engineering by February, 1915, is shown in Table V.

TABLE V

	Census Report of Numbers Employed in 1911 on "Engineering"	Percentage of Contraction or Expansion by February, 1915
Male	665,000	− 9.1
Female	21,000	+26.4

At the outset grave difficulties over the employment of women were created by the opposition of the skilled male workers to the use of unskilled labor. Soon after the outbreak of hostilities attempts were made to use women to tend the simpler machines, but these attempts were in many cases resisted by the men.[2] In

[1] *Labour Gazette*, March, 1915, p. 83.

[2] G. D. H. Cole, *Labour in War Time*, p. 242 ff.

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spite of these objections, however, women had found employment in increasing numbers in these trades. Engineering proper had been almost exclusively a "men's trade" before the war. Women were first employed in the subsidiary branches, such as the manufacture of shells, in which they were employed as fillers; but they have gradually been employed in the engineering workshops, where they have worked by the side of the men operatives.

The employment of women in the munitions trades was greatly facilitated by the so-called "Treasury agreement" of March 19, 1915, relating to the trade-union rules that restricted the employment of unskilled labor. Reference has already been made to the recommendation of Sir George Askwith's committee as to the relaxation of "demarcation restrictions," but it was necessary to obtain the consent of the trade unions before this could be done. The "Treasury Conference" between the representatives of the chief trade unions in industries producing commodities for the war and the Chancellor of the Exchequer and the President of the Board of Trade was called to consider the steps to be taken with reference to the "urgent need of the country for the large, and a larger, increase in the output of munitions of war."

In response to the appeal to relax trade-union rules, the officials of all the unions present, except the Amalgamated Society of Engineers,[1] agreed to a series of proposals, one of which, with certain provisos, was as follows:

> . . . . The workmen's representatives at the conference are of opinion that during the war period the relaxation of the present trade practices is imperative, and that each union be recommended to take into favourable consideration such changes in working conditions or trade customs as may be necessary with a view to accelerating the output of war munitions or equipments.

Among the conditions accompanying this agreement was the following provision relating to the employment of women:

> The relaxation of existing demarcation restrictions or admission of semi-skilled or female labour shall not affect adversely the rates customarily paid for the job. In cases where men who ordinarily do the work are adversely affected thereby, the necessary readjustments shall be made so that they can maintain their previous earnings.

[1] These proposals were also agreed to by the Amalgamated Society of Engineers when certain additional safeguards had been assured; see the *Labour Year Book*, 1916, p. 61.

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The rapid increase of women workers in the munitions trades was hastened, not only by this "Treasury agreement," but by the public feeling aroused by the battle of Neuve Chapelle and the creation of a special ministry of munitions. Mr. Lloyd George said the "cause of English freedom" had made it imperative that trade-union regulations be modified, especially those regulations that restricted the use of unskilled labor and the employment of women.[1]

The Ministry of Munitions issued in February, 1916, a profusely illustrated volume entitled *Notes on the Employment of Women on Munitions of War with an Appendix on the Training of Munition Workers*. The purpose of the volume is described by Mr. Lloyd George in his preface as an attempt to assist in the process of "diluting" skilled labor in munition factories. "The photographic records and the written descriptions of what is actually being done by women in munition factories on processes hitherto performed solely by skilled men will, I believe," wrote Mr. Lloyd George, "act as an incentive and a guide in many factories where employers and employed have been sceptical as to the possibilities of the policy of dilution." Mr. Lloyd George's "picture book,"[2] as some of the working women called it, is interesting because it discusses the question of how far the women were able to do the same work that

[1] *Annual Register*, 1915, p. 111.

[2] The working woman's point of view is indicated in the following editorial from the *Woman Worker*, March, 1916, p. 4:

"Our women munition makers ought to be proud! Mr. Lloyd George has brought out a picture book about them! It is a large, handsome book, costing 1*s*., entirely full of pictures of women workers and all the processes they can do. According to Mr. Lloyd George, never were there such useful workers as women munition workers. He says they can do brazing and soldering, they can make 8-in. H.E. shells, they can drill 8-pounder shells, and some of them are very successful in making high explosive shells.

"Well, it is very nice to be praised by so important a man, and it is even nicer that he should take the trouble to have a book filled with pictures of the girls at work. We women, however, have always had in our mind a lurking suspicion that we were, after all, almost as clever as the men, and it is pleasant enough to hear Mr. Lloyd George say so. But there is a conclusion to be drawn from all this. If girls are as important and as clever as the men, then they are as valuable to the employer. If this is so it becomes a duty of the girls to see now and always, whether on Government work or not, that they receive the same pay as the men. Otherwise, all their cleverness and their intelligence go to helping the employer and bringing down the wages of their husbands, fathers, and brothers."

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had been done by men, and the methods that had been adopted to make certain occupations more suitable for women. Slight modifications in many processes are reported. Thus, for the making of what are called "18-pounder high-explosive shells," it states:

> Only one change has been made in the machines to suit the women. At first the shell blanks were dropped into a round jig, and owing to the speed of drilling the blank was frequently wedged in the chuck after the drilling was completed. To avoid the heavy work of forcing the shell out of the chuck, a new type, designed by the drilling-machine maker, was fitted. . . . . One male supervisor (an unskilled workman) is provided for each eight machines, and the blanks are brought up to the machines in trucks designed for the purpose. . . . . It is advisable to provide (the women) with waterproof aprons, and to arrange that between each machine is a raised wooden platform, so that both the feet and dress of the operator are kept dry (p. 7).

Again:

> There has been, and still is, some difference of opinion amongst engineers as to the employment of women on shells of 6-inch calibre and upwards. . . . . The experience of those employing woman labour on large shell bodies is that the actual cutting operations demand no greater strain from the operator than do those on smaller shell, but that the lifting in and out is the all-important factor in the operations on heavy shell.
>
> Owing to the fact that women have only recently been employed on the heavier shells, some factories are using, temporarily, lifting devices which are obviously capable of considerable improvement. Illustrated is a case where an ordinary block swung on a small jib attached to the lathe is proving quite satisfactory. It is obvious, however, that fairly elaborate lifting devices are essential for efficient operation and constitute a deciding factor in the employment of women on heavy projectiles (p. 17).

However, leaving the subject of shell bodies, difficulties in the utilization of women's labor are pointed out:

> The question of the dilution of skilled male labour by women in general munition shops is admittedly a more difficult problem than that dealt with in the previous section. In projectile work and other operations in which the pieces are manufactured in tens of thousands and for which entirely special lathes and machines are designed, super-specialization and subdivision of operations render woman's work comparatively easy to organize. In the general machine shop, however, where pieces of work are dealt with in numbers of ten and twenty, no such special "fool-proof" devices or limitations of the number of operations per machine can be organized (p. 21).

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For "shell-fuses" woman labor was recommended as entirely suitable. "The majority of successful fuse-making factories are, as regards the operation of machinery, staffed entirely by women" (p. 63).

In spite of all that has been done to increase the staff of women munition workers, the movement is still going on, and there are signs that it must go still farther. A significant article in the *London Times*[1] recently reproached the engineers and the Ministry of Munitions because the substitution of women had not gone far enough. The engineers were told that their interest and their duty alike demanded that the employment of women should be extended without delay. The Ministry of Munitions was reproached because, though it had "given an overwhelming demonstration of the ability of women to replace men with success on practically any single class of operations involved in the manufacture of munitions," yet in the engineering industries, as the *Times* complained, only a fraction of what had been proved to be possible had actually been done in the replacement of men by women. The ministry was reproached for having acted timidly: "The suspension during the war of all restrictions on output having been first agreed with the trade unions and then passed into law, the Ministry, instead of securing that these restrictions were in fact removed, proceeded to debate them 'from town to town, from lodge to lodge, and from works to works.'"

The question of the extent to which women are employed is, however, less important than the effect of their employment (1) upon the rate of wages and the principle of "equal pay for equal work," and (2) upon the health of the women employed.

NATIONAL CONFERENCE OF TRADE UNIONS ON WOMEN'S WORK

Leaders among the trade-union women in England were prompt to foresee grave dangers from the increase in the industrial demand for women's labor unless the women could be organized and their interests safeguarded. Much of the new labor coming into the munitions industry is probably only temporary. Between 1901 and 1911 the statistics of occupations in the English census showed

[1] See the *Times*, weekly edition, May 4, 1917.

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that the proportion of women to men in industry had changed very little in the decade. Census statistics, however, indicated that the proportion of younger women to older women had increased. This withdrawal of women from industry, upon marriage, had created a reserve of woman's labor which has been called into service again since the war and which will probably retire again after the war[1]. Trade unionists, both men and women, were quick to foresee the difficulties in the way of organizing these women who looked upon themselves as in the labor market only temporarily. The War Emergency: Workers' National Committee called a national conference on April 17, 1915, of trade unions that had women members and of the special women's labor organizations. The following resolution submitted to the Conference by Miss Bondfield, of the National Federation of Women Workers, shows how clearly the intelligent members of the labor group understood the problems which they were facing. The resolution as passed by the Conference is as follows:

That this conference, representing the women's Trade Union, Labour, Socialist, co-operative, suffrage, and kindred organisations, declares that, as it is imperative in the interests of the highest patriotism that no emergency action should be allowed unnecessarily to depress the standard of living of the workers or the standard of working conditions, adequate safeguards must be laid down for any necessary transference or substitution of labour, and it therefore urges:

a) That all women who register for war service should immediately join the appropriate Trade Union for which they are volunteering service, and that membership of such organisation should be the condition of employment for war service.

b) That where a woman is doing the same work as a man she should receive the same rate of pay, and that the principle of equal pay for equal work should be rigidly maintained.

c) That in no case should any woman be drafted from the war register to employment at less than an adequate living wage, and that the stereotyping of sweated conditions must at all costs be avoided.

d) That adequate training, with maintenance, should be provided for suitable women whom it is proposed to place in employment under the foregoing conditions, and that in choosing candidates for such training preference should be given, where suitability is equal, to the normal woman wage-earner now unemployed.

[1] See Cole, *op. cit.*, pp. 247–48.

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e) That in any readjustment of staffs which may have to be effected after the war priority of employment shall be given to workmen whose places have been filled by women.

f) That the women who are displaced in this way shall be guaranteed employment.

An immediately urgent question of vital importance to all working men and women was the problem of organizing the new women workers who were coming to be in such demand in the army-contract trades. In particular the presence of large numbers of women in the munitions trades was likely to lead to serious consequences unless they could be promptly organized. It was suggested that they should join the Amalgamated Society of Engineers, to which the men in the same industries belonged. In June, 1915, however, the Society refused to admit women, and instead recommended that the women should be organized by the National Federation of Women Workers.[1] Their refusal to admit women was based on the theory that the women are not permanent members of the trade and that the "dilution" policy is only a temporary one. The Federation seems to have been most successful, not only in organizing the women munition makers, but also in protecting their interests before the Munitions Tribunals.

THE DEMAND FOR A MINIMUM WAGE FOR WOMEN IN THE MUNITION INDUSTRIES

A new series of Treasury conferences held in June, 1915, led to some new proposals that were ratified by the representatives of the workers in munition industries and later passed into law as the "Munitions of War Act" (June 23, 1915). This act adversely affected the women employed in munitions factories by making it illegal for anyone employed on munitions work to leave work or to change from one employment to another, even if one employer

[1] The National Federation of Women Workers is an interesting organization formed to assist in organizing women in trades where men's unions do not exist or are unwilling to admit women members. The Federation had in 1916 a membership of 20,000 women organized in local branches and as far as possible according to trades. The Federation membership includes ammunition, tin-box, and confectionery workers, shirtmakers, silk and thread weavers, bolt and lock, hollow-ware and chain-makers, laundry workers, charwomen, and dressmakers.

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should offer higher wages or better conditions of work, without a certificate granted by the first employer.[1]

The National Federation of Women Workers promptly urged that if its members were "to be tied by the state to one employment, the state must see that the conditions of that employment are such as to protect the health and efficiency of the worker, and the wages must be sufficient to maintain her in decency and comfort."[2] The hardships experienced in individual cases were very great. Thus the *Woman Worker* tells of a girl munition worker earning only 12 shillings a week who was refused a leaving certificate when she had a chance to earn 20 shillings a week at similar work for another employer.

It is impossible within the limits of this article to discuss the questions relating to women's wages that have arisen in connection with the extension of women's employment during the war.[3] In the munitions industries particularly the wage question has been acute because of the emphasis on the principle of "equal pay for equal work" and of the general feeling that a proper minimum wage ought to be guaranteed by the state.

A Manchester "Women's War Interests Committee" had undertaken an investigation of the payment of women munition workers, and found that the standard was 12 or 15 shillings a week in munition establishments in contrast to the 20 shillings, which was the standard or usual women's rate in the district.[4] The committee thereupon began to work for a guaranteed minimum of 20 shillings a week for all women in munition works.

[1] Munitions of War Act, 1915, sec. 7, provides: "A person shall not give employment to a workman, who has within the last previous six weeks, or such other period as may be provided by Order of the Minister of Munitions as respects any class of establishment, been employed on or in connection with munitions work in any establishment of a class to which the provisions of this section are applied by Order of the Minister of Munitions, unless he holds a certificate from the employer by whom he was last so employed that he left work with the consent of his employer or a certificate from the munitions tribunal that the consent has been unreasonably withheld."

[2] See Miss Mary Macarthur in the *Woman Worker*, January, 1916.

[3] For an important discussion of this point, see the report of the Committee of the British Association, *op. cit.*, pp. 516–18, 528ff.; and see also a very valuable contribution in *Economic Journal*, March, 1917, "The Remuneration for Women's Work," by Councillor Eleanor Rathbone, of Liverpool.

[4] B. L. Hutchins, *Women in Modern Industry* (London, 1915), pp. 256, 296.

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The agitation for "equal pay for equal work" and for a decent minimum wage for women munition workers had been growing since the time of the first Treasury agreement. This agreement had provided that the admission of "semi-skilled or female labour" should not "affect adversely the rates customarily paid for the job." This rather high-sounding statement was vague enough; and in reply to a question raised by Miss Sylvia Pankhurst as to exactly what was meant, Mr. Lloyd George replied:

DEAR MISS PANKHURST:

The words which you quote would guarantee that women undertaking the work of men would get the same piece-rates as men were receiving before the date of this agreement. That, of course, means that if the women turn out the same quantity of work as men employed on the same job, they will receive exactly the same pay.

Yours sincerely,
(*Signed*) D. LLOYD GEORGE

March 26, 1915

That this statement was considered most unsatisfactory the following extract from Miss Pankhurst's reply indicates:

Many thanks for your letter with its valuable explanation that women are to receive the "same piece-work rates as men were receiving before the date of this agreement." I conclude that the women will also receive any war bonus and increase of wages as a result of the war which would have been paid had men been employed. It is important to know, also, whether the same time rates are to apply in the case of women as those which were paid to men; because if this were not the case, employers might merely engage women to work on time rates to avoid paying the standard rate to men.[1]

In some of the large ammunition factories the low wages of women workers was not a new problem,[2] but one rendered more serious because of the vast numbers of women suddenly called into the trade and the new conditions of employment.

The attempt to secure minimum wages in this industry proceeded very slowly. Mr. Lloyd George was charged with giving

[1] See Cole, *op. cit.*, pp. 240–41.

[2] Testifying before the Committee on Home Work in the summer of 1907, Miss Mary Macarthur referred to the large ammunition factories (cartridge-making) as furnishing illustrations of low and irregular rates of wages paid for women's unskilled labor in factories. See *Minutes of Evidence: Select Committee on Home Work* (H. of C. 280), testimony of Miss Mary Macarthur.

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promises, but with failing to carry them out. In June, 1915, he had replied to an imposing women's demonstration by expressing his appreciation of the services of women. "Women's work was needed; the men had gone to the front; if the country was to be saved, women must come forward and help"; and he also said, "Wages should be fair. . . . . There should be a fixed minimum." As a matter of fact, more than one minimum was involved—a minimum for women doing men's work and a minimum for women who were in work not recognized as men's work before the war.

The first minimum was forced by the men, but even this minimum was slow in coming. In October, 1915, an order, known as "Circular L 2," was drawn up by the Munitions Labour Supply Committee embodying most of the promises made earlier in the year to the men's unions, but this order was never actually effective. In January, 1916, one important firm complained "that they were the only firm in the United Kingdom that were paying wages in accordance with Mr. Lloyd George's circular." As a result of continued protests by the Amalgamated Society of Engineers and the National Federation of Women Workers, the Munitions of War Amendment act in January, 1916, gave the Minister of Munitions power to fix the wages of women employed on munitions work; and as a result of this power, orders were issued in February, 1916, by means of which the terms of Circular L 2 had the force of law.

Circular L 2, however, took care only of the women doing men's work. "What about the women who are doing important work not recognized as men's work?" asked the National Federation of Women Workers. "There are many more of these women; they are, generally speaking, much worse off; they are less able to protect themselves; and therefore this claim on the minister to fulfil his pledged word is even stronger than for the others." The Federation also pointed out that there was little excuse for delay, since the problem was a simple one. "There are none of the complications so well known in the Trade Boards of 'how much the employer can bear' and whether we shall 'ruin trade.' The employer," the Federation said, "is the country itself, the country whose real interest is that no worker should be crushed under her burden. The trade cannot be hurt. Unfortunately the demand

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for instruments of war cannot slacken at present."[1] Calling attention to the fact that cost of living had risen more than 30 per cent since the war, the Federation asked for 5 pence an hour which, making allowance for the increased cost of living, was said to be equivalent to the rate fixed by the Trade Boards before the war as the minimum wage for some of the notoriously sweated trades like tailoring and shirtmaking.

After a period of several months the Ministry of Munitions issued a new order "relating to the remuneration of women and girls on munition work of a class which prior to the war was not recognized as men's work in districts where such work was customarily carried on." The highest rate in this order was 4½ pence per hour, with the provision that women and girls in the danger zones were to be paid a half-penny an hour in addition to the foregoing rate and the further provision that "allowances for other processes which are dangerous or injurious to health will be decided on the merits of the case."[2]

This order not only failed to meet the demands of the Federation but it was also a disappointment, in that it failed to cover all women engaged in munitions work or even in controlled factories. The new order, like the old, applied only to firms enumerated in a schedule which was not published with the order. The demand that the order apply to all women in establishments to which the Munitions act had been applied was urged by trade-union women as a reasonable one.

The National Federation of Women Workers has been very active in discovering and trying to remedy cases of sweated munitions work. The *Woman Worker* for February, 1916, for example, reported the case of a Scotch factory in which girls were employed in coremaking for grenade bombs. The girls were working five days from six in the morning to eight in the evening without any overtime allowance, and on Saturdays from six in the morning to five in the evening, Sundays from six in the morning to six in the evening; a net working week, after deducting meal times, of 82

[1] See *Woman Worker*, April, 1916.

[2] See the *Labour Gazette*, December, 1916, and see also an earlier order in the *Gazette*, November, 1916.

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hours, the total earnings working out at 16 shillings and 8 pence, or something under 2½ pence per hour. The night shift was working from 6:00 P.M. to 6:00 A.M. without any extra allowance for night work. The Federation has undoubtedly rendered a great public service in working to improve the wages and working conditions in such factories, but there remains ground of complaint that the government has not seen fit to take the whole matter of wages for war work under its direct control.

CLEARANCE PAPERS—THE MUNITIONS TRIBUNALS

Obviously the "leaving certificate" clauses of the Munitions act might easily be a serious means of oppression to the women employed. There appears to have been from the beginning feeling against them among the workers on the ground that they were an irritating and unnecessary hardship, since the Defence of the Realm act had made it illegal for employers to incite munition workers to change their employment.[1] A concession to the Federation of Women Workers in the Munitions Amending act was the appointment of women assessors on all Munitions Tribunals where women's cases were concerned. The need for women assessors was illustrated by a scandalous case in which three girls who had left their employment because of gross insult had to appear before a court of men to ask for the leaving certificate which their employer had withheld. An additional hardship in this case was that, although the employer was found to have unreasonably withheld their certificate, the court could not compel him to repay the girls the wages they had lost and the expenses of attending the court. It

[1] The *Woman Worker* published (February, 1916) the following statement of cases heard before the Munitions Tribunals up to November 27, 1915, as explaining in some measure their unpopularity.

	Cases	Defendants	Convicted	Fines		
				£	s.	d.
Against workmen:						
Strike Prosecutions	22	589	407	583	1	0
Breaches of Rules	786	3,074	2,012	1,649	17	6
Miscellaneous	6	9	4	3	10	0
Totals	814	3,672	2,423	2,236	8	6
Against employers:						
Lockouts	1	1	.....	....	..	.
Illegal Employment	72	80	55	289	14	6
Miscellaneous	13	13	1	1	0	0
Totals	86	94	56	290	14	6

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should be added that the Munitions Amending act also provided for the recovery of costs and expenses.

A few summaries of cases have been selected from among those published in the *Woman Worker* as illustrating the problems involved in the enforcement of the Munitions act. The first case illustrates the difficulty of determining which industries come under the act. A great deal of misunderstanding existed among working women as to the scope of the act. Many workers seemed to believe that no woman employed on government work could leave her employment without "clearance papers." Thus the *Woman Worker* repeats in more than one number the warning that employers cannot hold women employees for clearance cards except when they are working in engineering, arms and ammunition, and shipbuilding trades. "Any other worker," the girls are clearly warned, "can leave her employer as she likes and get a new job." The story is told of a shirtmaker in Woolwich who insisted even to representatives of the Labour Exchange that his girls could not leave him to go elsewhere without clearance papers, and similar cases were reported from other parts of the country.[1] A case which came before one of the Munitions Tribunals also illustrates the misunderstanding on this point:

Evie Mayne, aged 16, asked for a clearance card. It was stated in evidence by the firm that their business consisted in manufacturing a composition of mica and shellac known as micamite. This was used for insulating purposes in dynamos and other electric work. They supplied the Admiralty. The Court decided that the firm were manufacturers and not engineers, and that the girls employed did not need clearance cards.

Other difficulties in connection with the use of clearance papers and the importance of having a working woman's representative present at the sessions of the Munitions Tribunals are illustrated by the following cases reported by the *Woman Worker*.[2]

The Munitions act and low wages.—Lilian Hayhoe, a worker at Messrs. Eley's, Edmonton, applied for a clearance card. She had asked the firm for a clearance card on February 5th, but had been refused. Miss Susan Lawrence appeared to represent the Federation. Miss Hahyoe's case was that she was not earning sufficient wages. It was stated in Court that she was on piece, and had received 10*s*. for the week previous to February 5th. She made on an

[1] See the *Woman Worker*, March, 1916.

[2] *Woman Worker*, April and May numbers, 1916.

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average 13*s.*, and had earned 15*s.* with Sunday work. Three weeks' pay notes were produced, showing that her earnings for the weeks in question had been 13*s.* 7½*d.*, 9*s.* 11½*d.*, and 11*s.* 3*d.* She paid 2*s.* weekly in fares. The Court granted the clearance paper.

Ill-health as a cause of leaving.—At the sitting of the Metropolitan Munitions Court on March 16th the Organizing Secretary of the Federation of Women Workers was called as the woman assessor. The case before the Court was a clerk employed at Messrs. Siemen Bros., who claimed a leaving certificate on the ground of health. She was employed as foreman's clerk in a glass box in the middle of about three hundred machines, mainly drilling and capstans. She complained of the smell of oil. She suffered from severe headaches and had been off sick ten days. The firm refused the certificate on the ground that the real reason was her desire to get higher wages elsewhere. The Chairman and the assessors had difficulty in agreeing. Eventually the certificate was granted by "a majority of the Court."

Discharge without notice.—An interesting claim was heard in Manchester before the Local Munitions Tribunal, upon which Mrs. C. Pearson (District Organizer of the National Federation of Women Workers), one of the first women assessors, sat as an adjudicator. The claimants were three girls who were engaged in a munitions factory, and were discharged without notice or payment in lieu of notice. They were earning an average wage, with overtime, of 19*s.* per week. The employer dismissed the girls, owing to a Government contract running out; but the girls claimed that they were entitled to a week's money in lieu of notice, under Section 5, Sub-Section 3, of the Munitions of War Amendment Act. The President, in summing up, said that although the employer's contract with the Government had run out, there was also a contract with the employees which had to be fulfilled, and accordingly the employers were ordered to pay the girls a week's wages of 19*s.* each.

Unemployment and clearance papers.—In the Liverpool Munitions Court six women employed by Messrs. Buchanan & Sons summoned the firm for refusing them leaving certificates. The firm had no work to give them, but would not grant leaving certificates because "the lack of work might cease any day, and it would be a serious thing if they were short of forty or fifty girls." "It was, we suppose," commented the *Woman Worker*, "not serious, a mere laughing matter, for the girls to be short of wages for an indefinite time." The certificates were granted by the Munitions Court.

HEALTH OF MUNITION WORKERS

Closely related to the question of wages is the question of the health of women employed in the new occupations. The British Ministry of Munitions has rendered a great service to working women all over the industrial world in the work of its Committee on the Health of Munition Workers. This committee, with

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Sir George Newman, the well-known medical officer of the Board of Education, as chairman, was appointed in September, 1915, "to consider and advise on questions of industrial fatigue, hours of labor, and other matters affecting the personal health and physical efficiency of workers in munition factories." It is unnecessary to attempt to summarize here the valuable memoranda[1] which have already been issued by the committee, since these reports are fortunately being reprinted as bulletins of the United States Bureau of Labor Statistics and will soon be easily available.[2] The reports deal with the health of men as well as of women workers, but the committee has issued one special memorandum on the employment of women[3] in munition works, dealing with the health and industrial output of women as affected by night work, hours of work, overtime, rest pauses, and the provision of meals, sanitary conditions, physical condition of women workers, and questions of management and supervision. The report is of great interest to us in the United States, not merely because it contains an authoritative statement on the harmful effects of long hours and night work, but also because it shows how far we have lagged behind Great Britain in providing adequate protective measures for working women in time of peace. We can take no such backward step as was taken in England in the suspension of the Factory acts because we have not secured to the women workers in America such protection from overwork as England provided in the first half of the last century. That is, we cannot go backward where we have never gone forward.

As a matter of fact, there was no wholesale suspension of the Factory acts in England, even when the pressure for the production of supplies was greatest. Suspension or alteration of the provisions of the Factory acts is granted to employers after application to the

[1] The titles of these memoranda are as follows: "Sunday Labour"; "Welfare Supervision"; "Industrial Canteens"; "Employment of Women"; "Hours of Work"; "Canteen Construction and Equipment" (Appendix to No. 3); "Industrial Fatigue and Its Causes"; "Special Industrial Diseases"; "Ventilation and Lighting of Munition Factories and Workshops"; "Sickness and Injury"; "Statistical Information concerning Output in Relation to Hours of Work"; "Juvenile Employment."

[2] To be published as *Bulletins 221, 222,* and *223* of the United States Bureau of Labor Statistics.

[3] Health of Munition Workers' Committee, *Memorandum No. 4,* "Employment of Women" (Cd. 8185).

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Home Office, which considers the merits of each case and issues orders accordingly. Very considerable relaxations of the requirements as to hours of labor and night work for women were allowed and the Committee on the Health of Munition Workers has reported on the serious effects of these relaxations.

Recalling that in Illinois, one of our largest industrial states, the working women have never yet been able to secure the passage of a bill preventing night work, the following statement of the committee should be of special interest:

> The imperative necessity of war has revived, after almost a century of disuse, the night employment of women in factories . . . . it was banished by international agreement from the twelve European countries which signed the Convention drawn up at the International Conference held at Berne. . . . . The agreement was based upon the results of inquiries into the effects, economical, physical, and moral, of night work for women. The reports showed deterioration in health caused by the difficulty of securing sufficient rest by day; disturbance of home life, with its injurious effects upon the children; and diminished value of the work done—the common experience being that night work was inferior to day work. Now once more all these half-forgotten facts are in evidence in the Munition Factories. In a working-class home the difficulty in obtaining rest by day is great; quiet cannot be easily secured; and the mother of a family cannot sleep while the claims of children and home are pressing upon her; the younger unmarried women are tempted to take the daylight hours for amusement or shopping; moreover, sleep is often interrupted in order that the mid-day meal may be shared. The employment of women at night is, without question, undesirable, yet now it is for a time inevitable; and the Committee have therefore directed their efforts to the consideration of those safeguards which would reduce its risks to a minimum.[1]

Again, in Illinois a working week of seventy hours is not illegal for women in normal times of peace, but the Committee on the Health of Munition Workers found a working week of this length uneconomical even under the stress of war conditions. Thus the memorandum on "Hours of Labour"[2] contains the following statement:

> The Committee are satisfied that the strain of long hours is serious, and they are of opinion that continuous work in excess of the normal legal limit of 60 hours per week ought to be discontinued as soon as practicable, though

[1] Health of Munition Workers' Committee, *Memorandum No. 4*, "Employment of Women" (Cd. 8185, p. 4).

[2] *Idem.*, *Memorandum No. 5*, "Hours of Work" (Cd. 8186).

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they think that some greater elasticity of hours might be allowed than is provided for by the Factory Acts, and they see, for instance, little objection to such moderate overtime during the week as can be compensated for by an earlier stop on Saturdays. . . . . The Committee feel that the need for overtime amongst women and girls is much less pressing than it is for men; they are rarely employed on highly skilled work, and where there is still a good reserve of labour there should be little difficulty in gradually introducing shifts, or in other ways redistributing the work among a large number of operatives. They strongly urge that wherever practical overtime should be abandoned in favour of shifts.

Illinois has not yet provided by legislation for "one day's rest in seven," but again the Committee on Health of Munition Workers recommends such a break in the working week as necessary even under war conditions. On this point the report on the "Employment of Women"[1] contains the following statement:

The week-end rest has been found to be a factor of such importance in maintaining health and vigour that it has been reinstated by employers who had taken it for work at the beginning of the war. The Committee are strongly of opinion that for women and girls a portion of Saturday and the whole of Sunday should be available for rest, and that the periodic factory holidays should not, on any account, be omitted.

It is important to note, moreover, that the economy of shorter hours was demonstrated by some experiments concerning output in relation to hours of work undertaken by medical experts for the commission. It was shown, for example, that "to attain a maximum output women engaged in moderately heavy manual labor should not work for more than sixty hours per week," and it is also said to be "probable that the sixty hours per week were still too many to give the best total output."[2]

It will be interesting indeed if it is left for the greatest war in history to prove finally and conclusively that long hours, night work, and Sunday labor must be abolished, not only to safeguard the health of the women employed, but to promote the efficiency of industry.

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[1] Health of Munition Workers' Committee, *Memorandum No. 4* (Cd. 8185).

[2] *Statistical Information concerning Output in Relation to Hours of Work*, collected by H. M. Vernon, M.D. *Memorandum No. 12*. (Cd. 8344).

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THE UNIFORM BILL OF LADING

Business blanks or forms arise to facilitate complex business activities. The more complex, the more far-reaching, and the more impersonal the business activity, the greater the need for these commercial instruments. And the greater the need for forms, the more urgent the demand that they be standardized and uniform. It is natural, therefore, that with the rapid extension of the railway business there should have been an equally rapid multiplication of forms, and then that a movement should gain headway to make the forms of standard, uniform character.

Among these multifarious business forms used by the railroads is the bill of lading. This is a very important instrument now and has manifold possibilities for future development. It has been estimated that annually "there is about $25,000,000,000 worth of business handled through bills of lading, and of that, $5,000,000,000 is handled by the banks."[1] There is no wonder, then, that much concern is felt about the liabilities and conditions connected with it. What kind of an instrument this bill of lading is, what functions it performs as a commercial document, what steps have been taken to safeguard it and to make it uniform, and under what conditions and regulations it moves today will be the subjects of this discussion.

I

The bill of lading originated from the old ship "register," in which was entered the character and amount of goods delivered. This record served at first as written evidence of receipt of the goods, and later of the terms of a contract of shipment between the merchant and the master of the ship. "It would seem probable that oral evidence of shipment was replaced by the quasi-official ship's register, which in its turn gave way to the private contract between the individual merchant and the master."[2] It is possible to conceive of the entry in the register as a rudimentary bill of

[1] A. T. Thom, counsel of Southern Railway Co., in Senate Hearings on Bills of Lading, p. 111.

[2] Bennett, *History of the Bill of Lading*, p. 6.

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lading. But the need for the development of a separate and distinct document would be felt when the merchants no longer traveled with their goods.[1] When goods are dispatched under a shipment contract, there are three parties to this contract—the shipper, the carrier, and the consignee. Here is ample reason, in "the growing requirements of practical commerce," why the bill of lading should early have been issued in triplicate. Each party vitally concerned in this contract would desire a copy.

Originally transferred, in the United States, from the steamship, canal, and pike-road bill of lading, the railway bill was also at first little more than a certificate of receipt.[2] The numerous conditions which are today encumbering it were formerly printed on the tariff sheets.[3] Originally, also, bills of lading were drafted by each transportation company and very naturally differed "according to local conditions and to legislative enactment in different states."[4] Confusion in requirements resulted, and even the fierce competition between the railway lines that caused rate wars found expression in the stipulations on the bills of lading. Conversely, the development of through freight lines made for "homogeneity in various bills of lading." It was only with the growth of the co-operative idea among the carriers that the problem of a uniform bill came into definition.

The bill of lading, however, should be sharply distinguished from other forms associated with it. The freight bill, or the shipping bill, is a receipt for the goods delivered to the carrier, and nothing more. It is a form developed to fulfil that specialized function out of which the bill of lading grew. The bill of exchange, to which the bill of lading is often attached, is an independent, though an interrelated, document. It represents the banker's function in financing the shipment. Later it will be shown how intimately these two documents are connected; here it suffices to say that the bill of exchange is a business form which facilitates the financing of freight traffic

[1] Bennett, *History of the Bill of Lading*, p. 6.

[2] The history of the bill of lading in the United States has not yet been written. It is the early ambition of the writer to show by a series of forms how the modern bill has been developed. A very interesting collection is being made by the Chicago Traffic Club.

[3] McPherson, *Freight Rates*, p. 188. [4] *Ibid.*

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and, when accepted, sloughs off the bill of lading along with the certificate of insurance, the consular invoice, and other documents and stands alone, a complete instrument in itself.

As a mechanism for facilitating the transportation of goods, the bill of lading has three functions to perform. One of these functions is to serve as a receipt, where it duplicates the work of the freight bill. Indeed, it is gradually transplanting that document, just as the check is displacing the formal receipt in general mercantile transactions. A second function is to serve as a written evidence of a contract of shipment between shipper and carrier. A third function is to serve as a document of title to goods. In one or another of these functions the bill of lading meets the needs of the four parties chiefly concerned with a shipment of goods, i.e., the shipper, the carrier, the banker, and the consignee.

These bills of lading also fall into various groups or classes, according as they are looked at from different angles. First, as to kinds of freight, the bills fall into two groups. There are those intended to apply to general merchandise, which may be grouped in one great class. The second kind may be called commodity bills, such as those intended for the conveyance of livestock, grain, cotton, and perishable produce. Again, bills of lading may be classified, on the basis of the maker, into those issued by a firm or corporation or individual—a private bill—and those issued by the carriers themselves. In another way they may be arranged, on the basis of the factors affecting negotiability, into *order* bills and *straight* bills. The former are those which may be transferred by indorsement, the latter are those accompanying goods consigned directly to consignee and are merely consignable. And, finally, on the basis of the "conditions" of the contract of carriage, the stipulations and the limitations of liability, and the agreements with connecting lines, there are the standard (or Revised Standard Bill of the Southern Classification Territory), the uniform, the through and export, and the special bills. The last-named are distinct, as being issued under common-law liability.

The groups are by no means mutually exclusive, but they will serve to identify the problem underlying the uniform bill of lading. Clearly, the first step toward uniformity would have to do with the

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bills carrying the great class of general merchandise, and only gradually could the commodity bills be standardized—and only then on a commodity basis, i.e., grain bills would not be uniform with cotton bills or cotton bills with livestock bills. The problem of uniformity is not so vital as regards straight bills as it is respecting order bills, for the reason that uniformity is an essential element of free negotiability. For the same reasons the carrier's bills are of more importance than the private bills. But more important than all is the point that uniformity may apply to two distinct aspects of bills of lading: (1) to the laws under which they operate and (2) to the conditions of the contract which they contain. Early in the movement for uniformity this distinction appeared:

> It was first decided that the law of bills of lading was not the law of carriers. The law of carriers defines the relative rights and duties of shipper and carrier and is fixed by the common law, except as modified by statute. The conditions which you find upon the back of bills of lading do not pertain to the law of bills of lading, but to modifications of the law of carriers as affecting the relations between shipper and carrier. The law of bills of lading, however, properly understood, and as dealt with by the Commission, deals with bills of lading as documents of title and as pieces of commercial paper.[1]

Uniformity in bills of lading therefore may be of two kinds, and one may be secured without the other. The committee on uniform commercial laws may succeed in securing the passage in all states of the Union of the same law under which the carriers are to operate. Such legislation has already become a federal enactment to control interstate commerce and has become a law in fifteen states.[2] On the other hand, the same conditions may be agreed upon as to the contract of shipment on all transportation lines. The ideal to look forward to is this twofold uniformity. It remains to be considered what progress has been made and what is yet to be done.

The question of uniformity resolves itself into an attempt to harmonize the interests of the four parties chiefly concerned in the transportation of commodities. The shipper, in sending forth his goods into distant markets, is desirous of ridding himself as quickly as possible of all responsibility for them and at the same time of being able to realize as quickly as possible on the deal. He is

[1] *American Uniform Commercial Acts*, p. 221.

[2] Hearings, Senate Committee, p. 13. *The Nation's Business*, May, 1916, p. 77.

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anxious to have his goods arrive speedily and safely and to have his customer accommodated as completely as possible with as little expense as possible. That is, the shipper insists upon as much service from the carrier as he can get for the transportation charge. Opposed to these interests of the shipper are those of the carrier, who naturally wants to assume as little responsibility as he can. One fundamental issue arises out of this clash of interest—where shall the carrier's duty and liability begin and where shall they end?

On the financial side, too, an issue appears. Here the interests of the shipper, the carrier, and the banker are involved. It has been said that the shipper wants to be able to secure speedy reimbursement. For this he appeals to his banker, who says that he is willing to finance the transaction for a fee, provided his own interests are safeguarded. This means that there must never be any doubt of the documents accompanying the bill of exchange, and this means that always the liability on the bill of lading shall be sure and definite. To what extent, then, can any doubt as to the validity of the bill of lading arise, and what is the status of liability?

As for the consignee, his interests in the bill of lading, while not identical with, aid and abet, those of the shipper. Just as the latter wants the goods delivered so as to accommodate the consignee with least expense, so the consignee wishes to get as much service in addition to his goods as he can. Both shipper and consignee try to shift the burden onto the carrier. In his relations with the banker the consignee again joins with the shipper in asking for financial facilities. Often, of course, the consignee pays the freight, and in such a case becomes the shipper. There is therefore no new issue developed out of these relationships.

Subsidiary to the issues stated above is the relation of the bill of lading to the bill of exchange. To what extent should these documents be independent of one another? How far is the bill of lading collateral security, and how far is it so needed? Is this relationship changed by uniformity, and, if so, how far? These are questions that will come up for answer during the course of analysis. Another group is thus drawn into the discussion—namely, the credit men. Their interests are concentrated on the use of the bill of lading as a credit instrument, and will be taken up in connection with that subject.

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II

Since business forms reflect business usage, it follows that they must change with business changes. So long as carrying goods, especially on land, was private business, bills of lading remained also of private concern. It is not to be supposed that the times in which railroads refused to let their cars go on foreign lines, in fact, deliberately "identified" their rolling stock by special gauge of track, in which "for a railroad company to permit its cars to go away from its own tracks would have seemed equivalent to making the other company a present of them,"[1] would make for uniformity of business practice in transportation. Such were the conditions in the decade preceding the Civil War.

But traffic of all kinds outgrew such pettiness. The carrying of troops and government supplies during the war and the extending of mail service quickly showed the inconvenience of unnecessary transfers of all traffic. It was sometimes the practice to lift the body of the car from one set of trucks to another of different gauge in order to obviate the transfer of freight. The day was far spent when such foolish and arbitrary legislation as that which prohibited the Erie Railroad from making connections with any other road, under penalty of forfeiture of charter,[2] would be tolerated. And it was therefore inevitable that such legislation as the Act of 1866 should result. This act stipulated, among other things, that "every railroad company in the United States whose road is operated by steam be, and hereby is, authorized to carry upon and over its road all passengers, troops, government supplies, mails, freight, and property on their way from any state to any other state . . . . and to connect with roads of other states, so as to form continuous lines for the transportation of the same to the place of destination."[3] By this permissive enactment the gates were opened for great development. The artificial barriers, such as state lines, private interests, and tariffs, could no longer resist the pressure of traffic movement. Forwarding companies and railroad agreements followed in due course.

[1] McPherson, *op. cit.*, p. 161.

[2] *Ibid.*, p. 162.

[3] Thirty-ninth Congress, First session, chap. cxxiv, p. 66.

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The continuous-route idea brought the carriers into contact with each other's methods. As a result the forms and blanks of all kinds passed from hand to hand. It thus came to light that chaos ruled so far as the conditions of the carriers' contracts were concerned, just as in the case of rates charged. In fact, it must be remembered that the "conditions" were first a part of the tariff sheet.

Furthermore, with the rapidly growing importance of the railways and with the increase of their unseemly acts, there was a greatly increased complexity of state regulations. "We have the Federal law and we have the laws of forty-six states. I do not know of any subject of commercial importance upon which there is such a great variety of judicial decisions or greater conflict of authority than upon the question of carrier's liability."[1] It was natural, of course, for these multiform regulations to touch upon the relationship between shipper and carrier. These state statutes were mostly created to modify the common-law liability of the carrier. Sometimes the modification extended the carriers' liability; sometimes it contracted their liability.[2] At any rate, in so far as there was modification at all, the statutes affected the bill of lading. These regulations also left not easily ascertainable the status of the title to goods and interfered with the bill of lading's becoming a more important commercial document.

The movement for uniformity in bills of lading materialized as early as 1889, when certain difficulties in the Trunk Line and Central Traffic Association territories led to the formation of a joint committee. This committee drafted a uniform bill of lading which was adopted on July 1, 1890.[3] So serviceable did the efforts of this committee appear that it was made a permanent institution, and all questions relating to bills of lading were referred to it. The work of the committee resulted in two kinds of bills—the "Ordinary Form of Uniform Bill of Lading" and the "Form of

[1] Martin A. Knapp, chairman, Interstate Commerce Commission, in *American Uniform Commercial Acts*, p. 20.

[2] McPherson, *op. cit.*, pp. 241–43.

[3] A uniform bill of lading has been in use throughout the New England, the Trunk Line, and the Central Traffic Association territories since 1890.

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Uniform Bill of Lading at Carrier's Liability." The distinction is as follows:

> In addition to the exemptions from liability by the carrier specified by the common law, the "Ordinary Form of Uniform Bill of Lading" contained certain stipulations as to further exemption; the other, a "Form of Uniform Bill of Lading at Carrier's Liability," provided that the carriers assume all liability, limited only by the common law which frees the carrier in case of loss arising from any of the following causes: first, an act of God or the public enemy; second, inherent defect, quality, or vice of the thing carried; third, seizure under legal process; fourth, any act or omission of the owner of the goods.[1]

The next federal enactment to affect the bill of lading was the Harter act, of 1893. This act provided for extending the liability of common carriers to exporting and to coastwise trade and declared void any contract or agreement contrary to this liability. It declared that it was the duty of "the owner or owners, masters, or agents of any vessel transporting merchandise or property from or between ports of the United States and foreign ports, to issue to shippers of any lawful merchandise a bill of lading, or shipping document," etc., for identification of goods and as a receipt (sec. 4). The question of uniformity thereupon touched foreign trade and the through bills of lading used in it.

The matter then drifted along through the period of depression in the nineties and passed over practically unchanged into the new century. In 1904, however, a petition for changes in the bill of lading was made by the Illinois Manufacturers' Association to the Interstate Commerce Commission. The petition originated in certain complaints brought before that Association. This action led on November 21, 1904, to an order for an investigation to be made by the Commission. Hearings on the question lasted for nearly three years. The result was that an order was issued June 27, 1908, recommending a uniform straight, and an order-notify, bill of lading applicable to general merchandise.[2]

These two forms, recommended by the Commission, were identical so far as conditions are concerned, but differed in detail

[1] McPherson, *op. cit.*, pp. 188–89.

[2] Cf. Brief in Behalf of Carriers, October 10, 1916, p. 1; 14 I.C.C.R. 346, *In the Matter of Bills of Lading;* Annual I.C.C.R., 1904, p. 35.

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on the front of the forms. Since the conditions of the contract are the battleground of the opposing interests, these two kinds of bills need not be distinguished.

It is to be noted, however, that this phase of the movement for uniformity has to do with what has here been called "the law of carriers as affecting the relations between shipper and carrier." At the same time the other phase, which "deals with bills of lading as documents of title and as pieces of commercial paper," was receiving attention. The American Bar Association at its meeting in 1905 appointed a Commission on Commercial Acts, which in its turn asked Professor Samuel Williston, of the Harvard Law School, to draw up a tentative draft of a uniform bill of lading. This draft was submitted to the Commission the following year, August 23, 1906. Discussion, however, was deferred for one year, and the draft was meanwhile submitted to shippers, bankers, and carriers. At the next meeting of the Bar Association, May 13–14, 1907, the proposed bill was thoroughly discussed, and a second draft was prepared by August 21, 1907. This was also discussed and sent back for changes. A third draft was ready by June 1, 1908, which was presented at a hearing in New York, April 19–20, 1909, as a result of which the Commission approved a revised or fourth draft.[1] "One form recommended is an order bill of lading, printed on yellow paper, 8½ inches long by 11 inches wide, in which the word 'order' will be in print. A straight bill of lading is to be of the same size, printed on white paper."[2]

Meanwhile, however, the Hepburn act of 1906 had passed through the federal Congress and had become a law. It contained in the Carmack, or "first Cummins," amendment a provision affecting the bills of lading. It is therein provided—

> That any common carrier, railroad, or transportation company receiving property for transportation from a point in one state to a point in another state shall issue a receipt or a bill of lading therefor, and shall be liable to the lawful holder thereof for any loss, damage, or injury to such property caused by it, or by any common carrier, railroad, or transportation company to which such

[1] *American Uniform Commercial Acts*, pp. 22–34, 43, 60, 213.

[2] *Ibid.*, p. 15.

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property may be delivered, or over whose line or lines such property may pass, and no contract, receipt, rule, or regulation shall exempt such common carrier, railroad, or transportation company from the liability hereby imposed.[1]

This means that the initial carrier is responsible for the goods shipped. There is no shifting of responsibility under this act, and the worth of the bill of lading as a negotiable instrument is greatly enhanced.

Progress was thus being made both toward an agreement upon the conditions of contract in the bills of lading and toward uniform laws governing the relationship of shipper and carrier. But the controversy was far from final settlement. For two years longer the movement drifted along, when two important bills reached the Senate Committee on Interstate Commerce, one known as S. 4713 and the other as S. 957. The former was the Stevens-Clapp bill; the latter, the Pomerene bill. A very extended hearing was held covering the dates of February 16, 17, March 1, 2, 15, and April 26, 1912. All of the parties likely to be affected by changes in the bill of lading—the shippers, the carriers, the bankers, the receivers—presented their cases before the Committee at great length. The line of cleavage of interest involved became clear. On one side were ranged the shippers, the bankers, and the receivers; on the other stood the carriers with united front. The result was that the Pomerene bill was voted out, but later failed of passage. And so this great drive for a uniform law was stopped.

In 1915 another amendment was made to the Interstate Commerce Act of 1887, which already resembled Joseph's famous coat. This was the "second Cummins amendment," approved March 4, 1915. By its provisions the amount of damages recoverable on merchandise was the full value of damage or loss, with the exception of those articles where the value is required to be given when goods are received. As a result of this amendment the Interstate Commerce Commission reopened the case for further investigation.

[1] "The effect of the Carmack amendment is to hold initial carriers engaged in interstate commerce and 'receiving property for transportation from a point in one state to a point in another state' as having contracted for through carriage to the point of destination, using the lines of connecting carriers as its agents. Without the amendment the carrier might elect to carry to destination or to end of line"—*U. S. Compiled Statutes*, VIII (1916), 9298.

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"Elaborate hearings have been had at New York, Chicago, San Francisco, New Orleans, Atlanta, and Washington."[1] Briefs have been made out in behalf of the carriers, the National Industrial Traffic League, the Refrigerator Car Lines Committee of the National League of Commission Merchants of the United States, and on behalf of Armour & Co. and Swift & Co. The Interstate Commerce Commission is still busied with the voluminous record of these hearings and the briefs submitted.

The year 1916 saw the conclusion of one phase of this question. The Pomerene bill, which failed of passage in 1912, was revised and revived, and appeared for vote on June 24, 1916, in the House. Here it secured passage, with certain minor amendments, and came once more to the Senate. This body passed it August 18, with the provision that it go into effect on January 1, 1917. It was approved August 29. The passage of this bill "marks the culmination of an effort which has been in process for a good many years."[2]

This bill is an exceedingly important piece of legislation. Its effects will be cumulative and far-reaching. In substance it is a codification of the best common law, with modifications where the law is unsuited to present commercial conditions. In purpose it aims to make the bills of lading more fully negotiable by affording greater protection to discounting bankers and to the buyers of commodities, and to make carriers responsible to bona fide purchasers for value, on bills of lading issued by their agents, whether or not the goods have been received.[3] Greater protection to discounting bankers and to purchasers of commodities can come only by armoring the bill of lading against fraudulent practices. This is accomplished by increasing the responsibility of the carriers. But further than this:

The Pomerene bill declares fully negotiable all "order" bills and declares void any provision to the contrary; protects goods moving under an order bill from attachment and execution unless the bill itself is surrendered to the railroad or its negotiation enjoined; limits carrier's lien to charges properly made under the contract of carriage; prevents the owner from exercising the right

[1] Cf. Brief on Behalf of National Industrial Traffic League, p. 2.

[2] *Railway Age Gazette*, LX, No. 15, pp. 845–46.

[3] Cf. *The Nation's Business*, May, 1916, p. 77.

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of stoppage *in transitu* where he has parted with an order bill; and prescribes just how an order bill may be negotiated, and the effect of such negotiation.[1]

There remains yet to be considered the effect of this bill upon the interests and liabilities of all the parties concerned. Do the responsibilities of carrier and shipper under the law coincide with their functions? Have the obstacles to negotiability of the bills of lading been removed? Is it true in fact that "today a bill of lading is an instrument of credit, ranking on a par with a bill of exchange, and it must be negotiable for the same reasons that forced upon the commercial world and the courts, hundreds of years ago, the ruling that bills of exchange were negotiable"?[2] How far have the conflicting interests involved been harmoniously adjusted?

III

The present importance and the possibilities for further development of the bill of lading have been indicated. In order that it may come fully into its own, the bill must free itself from all stigma, from all manner of doubt as to the liabilities and responsibilities of all parties connected with it. If it moves as it should move, there would be ever behind it a sure and substantial basis of goods on their way to market—the best of all credit risks. It is now proposed to examine with some considerable care this "piece of commercial paper" as it circulates under existing rules, regulations, and uniform federal law. This examination will necessitate a critical glance at the functions and attending responsibilities of the four parties chiefly interested in the bill of lading.

The typical shipper represents the merchant function in modern business. His immediate and ever-present concern is to have his

[1] *The Nation's Business*, May, 1916, p. 17. This measure thus covers four main features, namely, (1) it provides for a liability of the carrier upon bills signed by its agents, although the goods have not been received in whole or in part; (2) it provides for a liability for the negligence of the carrier upon order bills of lading when the goods have been delivered and the bill left outstanding; (3) it provides that altered bills without authority shall be good for their original tenor; and (4) it requires the printing of "order of" on order bills, the omission of the words "not negotiable" from such bills, and the stamping upon straight bills of the words "not negotiable," and provides a liability in damages to anyone suffering from a violation of these provisions (Hearings before Senate Committee on Interstate Commerce, p. 19).

[2] *Ibid.*

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goods available for as wide a market as possible at least expense. The common carriers have made possible for him a world-wide market, so that he sells, to buyers whom he has never seen, goods which they have never seen. No matter whether this shipper is large or small, whether he has his own sidetrack or hauls his goods to the freight station, whether he loads his own cars or those of the railroad, he loses control and care of his goods when they start forth on their journey. So dependent has he become upon this common carrier that he feels his responsibility ended when the goods, as ordered, are delivered to the railroad. All that he asks in return is some indubitable evidence to serve as a receipt as to the character and amount of goods shipped, and by means of which he can pass title. The shipper then turns his attention to getting his money out of the deal as soon as he can.

The carrier's function is not a single or a simple one. There are always two phases to his task: he must transport and he must protect; he is a carrier, he is a bailee. From the moment he "receives" the goods he is a warehouseman until he "delivers" them to the receiver. It is well known how this side function arose: it was more economical for the railroads to own and operate their rolling stock and terminal facilities. Obviously, too, a freight car is a movable warehouse, just as a freight depot is a stationary one. It would seem to follow also that responsibility would be extended to keep pace with increasing functions. One test of the responsibility which the carrier has assumed is the facilities with which he has equipped himself. There are, for instance, sidings, platforms, freight sheds, scales, open cars, box cars, special cars, etc. As the carrier has assumed the function of cartage, of delivery, and of warehousing, he must also have assumed their attendant responsibilities.

The ideal of the carrier is to tap every resource and to serve adequately every market. This great task must be done effectively. For its fulfilment there is required a stupendous organization, reaching out its tentacles into every hamlet and village, touching those little pockets of fertile valleys hidden away in the midst of vast mountain systems, serving all races, all climates, in all seasons. It is thus that "transportation becomes the basis of civilization,"

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and is a "thing apart" from all other business organizations. So essential has it become that traffic must move, that the Supreme Court was swayed by the force of this practical argument to hold that a railroad organization should not be held responsible for the acts of its agents. The famous Friedlander case in 1888 held the railroads guiltless where the freight agents had signed bills of lading without having received the goods. While doing this, said the Court, the agents were not within the scope of their authority and hence were not really agents of the railway company. In making this decision the Court met a practical difficulty—escaped discouraging the railroads—but laid up in store much trouble for itself and for everyone interested in the bill of lading. But the main point to note is that the carrier's interest tended to become the dominating one.

The typical consignee is the purchaser of goods f.o.b. destination. He has bought goods which he has never seen, from a distant seller whom he may never have seen. His first interest is in the integrity of that distant seller, for he wants to be confident that the goods are of the character and quantity bargained for. He leaves it to the seller to arrange for the arrival of the goods. But from the carrier he expects assurance that the goods are as represented in the bill of lading; he expects a check on the integrity of the seller, for the carrier gives a receipt at the shipping point and therefore has the mechanism for checking this matter up. He will therefore insist that the carrier be held responsible for the face of the bill of lading signed by its agent. Aside from this the consignee expects of the carrier an efficient fulfilment of the carrier function, i.e., the speedy and safe transportation and the prompt notification of arrival of the goods. On his part, too, he must be ready to receive the goods and, when title passes to him with the possession of the bill of lading, to assume his responsibility for them. The point at which this responsibility passes from carrier to consignee must be specifically ascertainable.

The banker enters as financial agent, and with him comes the bill of exchange. His function is to loan money so that the "long-time transaction" may be made. The seller needs quick payment in order that he may carry on business continuously; the buyer may

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need to borrow money on the goods sent to be repaid as they are sold. They both look to the banker. For the loan the banker needs security. The mechanism for facilitating the loan is the bill of exchange, and the security is the bill of lading, which carries title to the goods. On a part of the way these two documents go hand in hand; the draft reaches the banker with the bill of lading attached. Here arises one of the issues underlying the whole question of uniformity, as indicated above. Is there ever any doubt of the documents accompanying the bill of exchange?

The adequate reply to this query is the notorious Knight, Yancey & Co. case (209 N.Y. 224). This company had drawn on Springs & Co., New York, for $39,000, as per written agreement, against shipment of 600 bales of cotton. But the bills were forged and the cotton never was shipped. These bills were discounted at the First National Bank of Decatur, Alabama, where Knight, Yancey & Co. were located, and were sent on to the Hanover National Bank, New York, for collection. The latter bank accepted the bills and the documents were detached. In due course of time the forgery was discovered and recovery for the loss was sought. But the Court held that "the attachment of bills of lading to a draft does not make the former a part of the latter; that the one who accepts or pays such a draft must be assumed, in the absence of special circumstances, to do so on the faith of the draft itself, and that reliance upon the bills of lading is not a fact which enters into the substance of the real transaction in accepting or paying the draft, but is an extrinsic fact."[1]

And, if this is not sufficient demonstration, there are the great cotton frauds in which European banks lost millions of dollars through bills of lading being issued without the cotton having been delivered to the railroads. These frauds threw American cotton bills into such disrepute that the International Bankers' Convention, meeting in London, declared they were no longer acceptable without a guaranty from American bankers. These bankers in turn passed the responsibility on to the railroads. Instances might easily be multiplied in shipments of wheat and perishables.[2]

[1] Cf. *Banker's Magazine*, LXXXVIII, 34.

[2] Cf. Senate Hearings, pp. 145–60, 218–26.

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Enough has been said, however, to show that, prior to the Pomerene bill at any rate, there was doubt as to the validity of, and the liability on, bills of lading. And the banker, as did the consignee, turned to the carrier for a guaranty.

The crucial point has now been reached. How does the bill of lading, serving in its three capacities—as a receipt for goods, as containing the written conditions of the shipping contract, and as a document of title to goods identified in its descriptive terms—and moving under the provisions of federal and uniform state legislation, meet the requirements of the parties whose functions have been analyzed?

First, then, the bill of lading is to move under the provisions of the Uniform Bill of Lading law, the Pomerene bill, which at present affects all interstate and export traffic, and the intrastate commerce of fifteen states. As a receipt for goods, the bill of lading is made more effective by the provisions of this statute. Section 20 declares that the words "shipper's weight, load, and count" shall not be inserted in the bill of lading, if, as a matter of fact, the carrier did load and had an opportunity to count and weigh. If the words are inserted under these conditions, they are "null and void." Section 21 provides that, if goods are loaded by the shipper, and the goods are described in the bill of lading by "marks, labels, or statement," and if a statement of that tenor in the bill is true in fact, the words "shipper's weight, load, and count" may be inserted with full effect. But even here the carrier is held liable to weigh and count, if the chance to do so is given it. By sec. 22 the carrier is held liable on bills of lading issued by its agents, whether goods have or have not been delivered to the railroad. This provision abrogates the decision of the Supreme Court in the Friedlander case. Under these provisions the face of the bill of lading defines sharply and clearly the parties liable, fraudulent use of the bills has been eliminated, but the possibilities of forgery are left untouched.

As a document containing the conditions of a contract of shipment between the consignor and the carrier, the bill of lading is very considerably affected by the uniform law. The law provides that bills of lading shall not be issued in sets or parts (sec. 4); that

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[illegible] consignor, and if so delivered shall be subject to a lien for elevator charges in addition to all other charges hereunder.

Sec. 4. Property not removed by the party entitled to receive it within 48 hours (exclusive of Sundays and legal holidays), after notice of its arrival has been duly sent or given, may be kept in vessel, car, depot, or place of delivery of the carrier or warehouse, subject to the tariff charge for storage and to carrier's responsibility as warehouseman only, or may be, at the option of the carrier, stored in a public or licensed warehouse at the place of delivery or other available place, at the cost of the owner, and there held at the owner's risk and without liability on the part of the carrier, and subject to a lien for all freight and other lawful charges, including a reasonable charge for storage. Nothing in this paragraph shall be construed as lessening the time allowed by law or as setting aside any local rule affecting car service or storage.

Where nonperishable property which has been transported to destination hereunder is refused by consignee or the party entitled to receive it, or said consignee or party entitled to receive it fails to receive

[illegible] agreed that the owners or consignees of the cargo shall contribute with the shipowner in general average, and shall pay any salvage or special charges incurred, even though the necessity for the sacrifice or expenditure was brought about by fault in navigation or management of the ship.

If the property is being carried under a tariff which provides that any carrier or carriers party thereto shall be liable for loss from perils of the sea, then as to such carrier or carriers the provisions of this section shall be modified in accordance with the provisions of the tariff, which shall be treated as incorporated into the conditions of this bill of lading.

The term "water carriage" in this section shall not be construed as including lighterage across rivers or in lake or other harbors when performed by or on behalf of the rail carrier. The transportation of any property under the terms of this bill, by lighter, car float, or car ferry, in or across rivers, harbors or lakes, shall be deemed to be transportation by rail."

Sec. 10. Any alteration, addition, or erasure in this bill of lading which shall be made without an indorsement thereof hereon, signed by the agent of the carrier issuing this bill of lading shall be without effect, and this bill of lading shall be enforceable according to its original tenor.

[illegible] The two paragraphs here referred to are the two last preceding paragraphs in plain type, not including the paragraph in bold faced type.

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"duplicate" shall be written on order bills when they are so in fact (sec. 5); that delivery is legal only as stipulated in sec. 8; that the carrier is responsible for wrongful delivery (sec. 10), for failure to cancel an order bill (sec. 11), for full delivery of goods (sec. 12); that in case of any alteration being made in the terms of the bill of lading the contract holds according to the original tenor (sec. 13); and that the transferor warrants (*a*) that the bill is genuine, (*b*) that he has a legal right to it, (*c*) that he has no knowledge of fact that would impair it, and (*d*) that he has the right to transfer title to the goods (sec. 34). The "conditions" in the bill of lading must come within the limitations indicated, and in so far every holder may know his rights. And once more the tendency has been to broaden the scope of the duties and liabilities of the carriers.

As a document of title to goods the bill of lading is also regulated by the Pomerene law. In this respect the law provides that "non-negotiable" shall be written on straight bills (sec. 6); that mere notification on order bills has no effect on negotiability (sec. 7); that in case of loss of the bill of lading the title may be established by order of the Court (sec. 14); that attachment for debt shall be as on other property hard to reach (sec. 23); that order bills are negotiable by delivery "if specified on the bill 'to order of a specified person,'" who has indorsed in blank (sec. 27); that indorsement on an order bill makes it negotiable (sec. 28); that straight bills are transferable, but not free from equities, if accompanied by an agreement, expressed or implied, to pass title (sec. 29); that full legal title to goods is acquired through the bill of lading (sec. 31); that title on a bill transferred, but not negotiable, passes subject to agreement of transferor (sec. 32); and that when goods have been sold and an order bill appears in the hands of an innocent purchaser for value, it is good against the carrier (sec. 38). Under these provisions the title to goods, of which the bill of lading is a legal representative, may, under any condition and at any time, be traced as definitely and readily as in the case of other legal instruments.

A very great deal was said in the hearings on the Pomerene bill about making the bill of lading more worthy of its position as an

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important commercial document by means of an increase of its negotiability. Says one witness, Mr. Sol. Wexler, vice-president of the Whitney Central National Bank, New Orleans, La.:

> I maintain that the business of the world, not only of the United States, but of the whole world—as it is done today—is done largely upon bills of lading, whether "to order" or "straight"; that it has become the most important instrument of credit, in use in the world today, of any kind; and that it is necessary for the commerce of this country to make that bill of lading fully negotiable, entirely safe, and to make the person who receipts for the goods, whether they have been delivered to him or not, responsible for their delivery. . . . . All we are asking of this bill of lading is to protect the innocent holder of the document.[1]

And also, as phrased by Mr. Francis B. James, the leading advocate:

> An order bill of lading is commodity currency, and is doubly so when accompanied by a draft—the draft with its dollar mark representing the unit of value and the order bills of lading a unit of quantity. By the use of a negotiable order bill of lading, properly protected by legal sanction, our great staples and other commodities are turned into a part of the asset currency of the country.[2]

As illustrated by these quotations, two main requests stand out from the discussion. One is that the liability on bills of lading be readily ascertainable from those instruments themselves, and the other is that the bills be made more fully negotiable. Incidentally it is suggested that the liability be defined, so as to hold the carrier more fully than formerly. This position would be enough in itself to range the shippers, receivers, and bankers on one side of the question. But these two points are not independent of each other. Clearly defined liability on the part of a responsible party is an essential to free negotiability. Therein may lie another reason for holding the carrier to more extended liability.

Something further needs to be said about the negotiability of the bill of lading. Extravagant and not well-considered statements have been made on the subject. "The bill of lading," wrote President Hadley years ago, "is made to serve the same purpose as a bill of exchange."[3] "The [order] bill of lading thus contributes to that fluidity of the circulating medium, that celerity in the

[1] Hearings, p. 40.

[2] *Ibid.*, p. 55.

[3] *Railroad Transportation*, p. 58.

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transfer of merchandise, which are striking achievements and essential requirements of current civilization."[1] "Bills, drafts, notes, checks, and bills of lading are in fact and practice parts of the currency of commerce."[2] "A negotiable order bill of lading ought to be as clean as a check, draft, or promissory note."[3] What specifically can these utterances mean? Apparently the idea that lies behind them is that bills of lading may be made into a new kind of currency of commerce, so that along with checks, drafts, and promissory notes they may save "the necessity of the large concentration of money to handle and move the staple commodities of the country."[4]

Such a service is demonstrably impossible. Not only are bills of lading representative of a unit of quantity, of a certain amount of certain commodities—and commodities for obvious reasons can never again become a universally acceptable medium of exchange—they also are not used, or intended to be used, as a medium of exchange, as the currency of commerce in any true sense. Negotiability, as used in relation to bills of lading, does not, or should not, imply making them serve the purpose of bills of exchange. The distinction was correctly stated, though for a different purpose, by W. W. Porter many years ago:

> A large number of dicta have been uttered by eminent authorities in assertion of the negotiability of the bill of lading, but no case can be found, unless arising under a special statute, in which a bill of lading has been treated as an instrument which is negotiable in the same sense as bills of exchange and promissory notes are negotiable. All broad assertions of the negotiability of the bill of lading, when examined in the light of their context and of their actual application to the very cases in which they were unguardedly made by the Court, will be found equivalent merely to a statement that the bill is transferable by indorsement and delivery and that such indorsement and delivery transfer to the indorsee or holder such rights to, or property in, the goods as it was the intention of the parties, gathered from all the circumstances, to pass.[5]

Bills of lading are not currency any more than mortgages and deeds and warehouse receipts are currency. They are collateral

[1] McPherson, *op. cit.*, p. 190.

[2] *American Uniform Commercial Acts*, p. 56.

[3] *Ibid.*, p. 20.

[4] Hearings, p. 15.

[5] *The Bill of Lading*, pp. 79–80.

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security and nothing more. Nor will it ever be possible for them to meet the requirements of the true negotiable instrument.

An instrument to be negotiable must conform to the following requirements: (1) it must be in writing and signed by the maker or drawer; (2) it must contain an unconditional promise or order to pay a sum certain in money; (3) must be payable on demand, or at a fixed or determinable future time; (4) must be payable to order or bearer; and (5) where the instrument is addressed to a drawee, he must be named or otherwise indicated therein with reasonable certainty.[1]

Requirement (2) makes the vital and essential distinction between bills of lading and bills of exchange or promissory notes. And a use of the words "currency of commerce" in connection with bills of lading or a classification of them indiscriminately with checks, drafts, and notes is confusing and misleading.

The Pomerene law has not, therefore, made the bills of lading "currency of commerce," or capable of taking the place of bills of exchange. It has, however, done a great and good service; it has clearly defined the responsible parties in the shipment contract and thereby has made the bills of lading more readily acceptable as collateral security for loans by means of bills of exchange. This is true both for "order" bills and "straight" bills; and this was and should have been the essential purpose of the law. The negotiability of order bills readily follows under the provisions permitting transfer of title.

But in extending the liability of the carriers something else also resulted. The carriers were forced to become a kind of "guaranty trust company." In practice, bills of lading are not made out by the carrier's agents in the vast majority of cases.

Today I think it is no exaggeration to say that not one bill out of a thousand—and I believe I could say 10,000—is made out by the agent of the railroad company. The business of this country could not move for a single day if the bills of lading were not made out by the shippers. It is not merely a question of the number of agents or the size of the platforms to hold freight, but it is a question of time. There are not enough hours in the day, and there is not enough space in the streets of any large city adjoining the terminals of railroads, to accommodate the drays and wagons. . . . . That bill of lading

[1] *Uniform Negotiable Instrument Law*, sec. I.

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is checked with the goods, if there is time. If there is not time, it is checked with the shipping order. . . . . The main object in life is to get rid of that drayman.[1]

This law compels responsibility by the carrier on bills filled out by the shippers, hastily checked by the agents of the carriers, and then signed. Bills of this character are to be raised to a plane of unquestioned reliability. The railroads claim, and with a very sensible show of justification, that a careful checking up on these bills is necessary for such liability; that this is a new and expensive service not included in the present rates charged; and that an added recompense is due them for it.

The Pomerene law, then, has favored the shipper, the receiver, and the banker by giving a better kind of collateral security, upon which bills of exchange are more confidently drawn and more readily accepted. This has certainly facilitated commerce, has made bills of lading better commercial paper. At the same time, in extending the liability of the carriers, it has compelled them practically to guarantee the integrity of shippers who make out their own bills of lading and to be responsible for the acts of all their agents, near and far, high grade and low grade, contrary to the decision in the Friedlander case. Furthermore, it has declared the negotiability of order bills and the transferability of straight bills. The broad lines of liability are thus uniformly laid down.

IV

The other phase of uniformity—the conditions of the contract of shipment between shipper and carrier—still remains. As has been indicated before, here is a direct clash of interest. The only way out is through a compromise. The question has been fully presented to the Interstate Commerce Commission. The main points of the opposing contentions will be presented here, and their bearing upon the general problem of uniformity will be shown.

The contentions by these two parties are best presented by a copy of the conditions of the uniform bill of lading with the suggested changes.

[1] Hearings, p. 101, testimony of H. L. Bond, general counsel of the Baltimore & Ohio R.R.

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The demands of the carriers may be summarized under seven heads: (1) relief from responsibility for discrepancies in weights of certain commodities, such as "grain, seeds, or other commodities"; (2) the distinction to be made clearly between carrier and warehouseman function, with a corresponding distinction in liability; (3) the use of open cars, due either to "general custom," "nature of property," or order of shipper, shall entail liability only for negligence (except in case of fire); (4) the amount of loss or damage is to be computed on the basis of actual value of the property at the place and time of receipt; (5) forty-eight hours after arrival and notice to consignee is a reasonable length of time for the carrier liability to extend, beyond that limit care of the goods is a warehousing function; (6) where no regular freight agent is located, the goods delivered to or received from sidings, wharves, or landings are at the shipper's or consignee's risk, except for negligence of carrier; (7) where goods are carried by water all or part of their journey, unless diverted by the carrier, they entail the customary exemptions from liability, as on ocean commerce.

The shippers, on the other hand, want the following conditions: (1) that the carrier's liability as a common carrier be terminated only "as provided by law;" (2) that property not usually carried in open cars shall be so carried when the shipper orders it, at the owner's risk for damage arising as a direct cause of being so shipped, if the carrier has used reasonable care; but that loss by fire holds the carrier as fully liable as if the goods were carried in closed cars; (3) that the amount of loss or damage to property shall be the full actual loss, including freight charges, if paid, at the time and place of loss or damage; (4) that the determination of the time when the carrier, having transported the goods, ceases to serve in that function and becomes a warehouseman shall be determined by the circumstances of the case; (5) that the carrier shall be held continuously to full liability, even though the goods travel a part or all of the way by water.

These are the opposing contentions over the conditions of the shipment contract in the straight and order bills of lading. They are the remaining obstacles to the desired twofold uniformity, i.e., of the conditions of the contract and of the law of bills of lading, so

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far as the two kinds are concerned. There remain other questions on the export bill of lading, on the livestock bill of lading, and on the proposed coal bill of lading. But since the differences of interests in those bills of lading must be settled upon the same principles that underlie the adjustment in the case of straight and order bills, they have not entered into this discussion.[1]

A survey of this clash of interests will reveal the broad principles upon which adjustment must be made. The compromise that is necessary must be based on the rule of reasonableness, and reasonableness in this case means a clear understanding of functional service and a fair return upon that service. Back of the whole controversy is the consideration that the bill of lading is a special contract of shipment, whose purpose is "to modify the liability which would exist at common law."[2] The shipper is free to elect to ship under common law or on the bill of lading.[3] In return for the limitation of liability under the bill of lading the carriers offer a reduced transportation charge of 10 per cent (formerly 20 per cent). If the bill of lading is issued, it moves under the provisions of the Pomerene law. And on the background of these considerations the contestants have appealed to the Interstate Commerce Commission as to the justness and reasonableness of their claims.

The whole case seems to simmer down to this: (1) Where is the point in the process of transportation, at the point of receipt, *in transitu*, and at destination, that the common carrier serves merely as a warehouseman or as both a common carrier and a warehouseman? (2) Must the carrier assume the full liability of a common carrier and a warehouseman, even though it does not offer the equipment or facilities to serve in both capacities? (3) Shall the ancient custom of limited liability on the water routes be abolished? (4) Shall the "actual value" of the goods lost or damaged be determined by their value at the time and point of shipment or at the time and point of loss or damage? The decision of the Commission must cover these points. Their pronouncement is awaited with much interest and concern.

[1] The contentions on these commodity bills are fully set forth in the briefs of the carriers and shippers.

[2] Carrier's Brief, p. 10.

[3] Cf. sec. 8, Pomerene Law.

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V

This survey of the uniform bill of lading question has shown the development of the movement for uniformity and the progress that has been made in it. An attempt has been made to identify the essential issues of the controversy, to show how far adjustment has been achieved, and what still remains for adjudication. The bill of lading "as a piece of commercial paper" has been analyzed, and its functions in the transportation process defined. Certain vagueness and confusion in terminology of those discussing this important commercial document has been examined.

It may be deduced from these considerations that the bill of lading can never become a negotiable instrument "ranking on a par with a bill of exchange," because their functions are different in character and because the word "negotiability" cannot be applied in the same sense to both of these instruments. Furthermore, it seems clear that three different functions have been concentrated in this bill of lading—namely, to act as a receipt, as a contract, and as a document of title to goods—and that the movement for uniformity, by extending the carrier's liability, has added a fourth as a guaranty of the shipper's integrity to the banker and the consignee. That these functions are merged one into the other by practical considerations is also manifest. Some careful thinking and some clear reasoning will be needed to disentangle them. And shooting through all these problems is the practical issue—traffic must move. It is that issue which sets the bill of lading apart from other similar documents, such as deeds, mortgages, and warehouse receipts, important as they are.

And, lastly, this discussion has revealed the great importance attached to the bill of lading as collateral security. Where the bill of exchange, with documents attached, moves "documents against acceptance," the bill of lading assumes transcending importance; it must be unquestionable security. This is true in both domestic and foreign trade.

This piece of commercial paper, issued annually to an extent that represents twenty-five billion dollars worth of commodities, is a commercial instrument worthy of much serious consideration.

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"The bill of lading is an instrument for facilitating commerce, the importance of which is not generally known."[1] It will never fully come into its own until all controversies concerning interpretation, responsibility, and liability are adjusted. Toward this adjustment great strides have been made. All interested parties have been heard; the evidence is in; uniform laws are being adopted in one state after another; the "conditions" alone are under fire. The decision of the Interstate Commerce Commission on these disputed points is due.

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[1] McPherson, *op. cit.*, p. 190.

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MEDICAL BENEFITS UNDER WORKMEN'S COMPENSATION. II

The cost of medical aid evidently depends not only upon the amount required but also upon the cost per unit, and, therefore, upon the method of organization of medical aid. Efforts toward cheapening medical service for the poorer classes are not unknown in this country. Witness the growth of contract medical service for industrial establishments, and also the development of the so-called lodge doctor. In the related field of social insurance—namely, sickness insurance—very material cheapening of the unit of medical service has been accomplished in Europe through thorough organization.[1] There are few evidences in the American compensation laws of any carefully thought-out plans of organization, but efforts to limit cost are many, mainly through one or both of the following methods: (*a*) restriction of the choice of physicians and (*b*) limitation upon the cost of the physician's service as distinct from restriction of the amount of medical service. Of these two methods, the latter represents a more recent development and is found as yet in comparatively few acts.

By implication the restriction of the injured employee's right of the selection of a physician may be read into almost every one of the American acts, though the exact language of the law by which this is accomplished is subject to numberless variations. The statement was previously made that the experience of Continental Europe did not exercise any influence over American legislation. This is not quite accurate. The early discussion of compensation contains many references to the "dangers" of social insurance. The works of Friedensburg[2] and Bernhard[3] achieved for a time a

[1] See I. G. Gibbon, *Medical Benefit in Germany and Denmark;* also I. M. Rubinow, *Standards of Health Insurance*, New York, 1916.

[2] *The Practical Results of Workingmen's Insurance in Germany*, by Dr. Ferdinand Friedensburg, translated from the German by L. H. Gray, Ph.D. (New York), 1914.

[3] *Undesirable Results of German Social Insurance*, by Professor Ludwig Bernhard, translated by H. G. Villard, Workmen's Compensation Publicity Bureau, New York, 1914.

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popularity never possessed in their native land. The most extreme statements were made regarding the dangers of malingering,[1] and a large share of responsibility was placed upon the medical profession for their "doctor's graft" and encouragement of fraud and malingering. For illustrations of the last feature, the experience of France was largely drawn upon,[2] where the abuse of the free choice of physician granted by the law to the injured has become a matter of live discussion.

The French compensation act specifically states that "the injured person may always choose for himself his physician and his pharmacist" (Act of April 8, 1898, Art. 4, amended by the Act of March 31, 1905). The danger of excessive cost of this arrangement is met by a strict adherence to a "fee schedule," which regulates the physician's charges. As to the efficiency of this method, opinions in France differ sharply.

Similar specific provisions granting freedom of choice of physicians to the injured workmen are found in a few other European acts. Thus the Belgian act provides that "the injured person shall have the choice of a physician and druggist," except where "the employer has established a medical and pharmaceutical service entirely at his own cost," or "when the parties have agreed by special stipulation in the labor contract to have the service established by the employer" (Act of December 24, 1903, Art. 5).[3]

In most other countries, however, medical benefits are largely administered in connection with the compulsory sickness insurance, and the same rules apply to accidents as to sickness; the rules as to the freedom of choice of physician by the patient being subject to very many local variations, from treatment administered by

[1] T. P. Sherman, *Notes on Malingering Under Workmen's Compensation Laws* (pamphlet). Among the provisions of the law which promote malingering is mentioned: "a provision allowing an injured workman to select his own physician and obligating his employer to pay therefor." Such a practice, says Mr. Sherman, "simply breeds malingering and is absolutely inexcusable" (p. 14).

[2] See *Workmen's Insurance in France, Holland, and Switzerland*, a series of letters by Harold G. Villard, (reprinted largely from the *New York Evening Post*, 1913).

[3] For a convenient reference to most foreign compensation acts, see *Twenty-fourth Annual Report of the* (United States) *Commissioner of Labor*, II (Washington, 1911), Appendix, pp. 2435–2726.

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special medical officers of the Sickness Insurance Fund down to full liberty of choice among a large number of physicians registered with the Sickness Insurance Fund.[1] Finally, in some countries, as, for instance, in Spain, the right of the employer to select the physician is definitely stated. It is significant that not in a single American compensation act is the injured employee specifically granted the right of selecting his physician,[2] though in some acts the language is so indistinct as to leave the question open.

Many acts simply specify the obligation of the employer to furnish "medical and hospital *services* and *medicines*," etc., thus creating a strong presumption that medical aid must be furnished *in kind*, which presupposes the employer's right to select the physician, hospital, etc. (Hawaii, Massachusetts [old act], Maine, Michigan, Rhode Island, Vermont). Several other states strengthen this formula by the phrase "unless the employee refuses to allow them to be furnished by the employer" (New Jersey, Louisiana, Nebraska, Pennsylvania), under which circumstances the employer's obligation to furnish medical aid is at an end. The Illinois act makes the distinction very clear by the statement that the employee may select his own physician or hospital at his own expense. This formula is also followed in the Canal Zone regulations.

The need of medical aid is usually urgent, especially so in accidental injuries. The right to receive medical aid in kind is not a right that can conveniently be satisfied by delayed litigation. The obvious question must arise as to the rights of the injured workman in case the employer fails to comply with the requirements of the law. Where the early laws prevail, which have failed to provide for these contingencies, courts and industrial commissions are called upon to lay down rules of action. But in the recent acts some provision is made.

The California act was perhaps the first to state definitely that "in case of his [the employer's] neglect or refusal seasonably to do

[1] See I. G. Gibbon, *loc. cit.*

[2] A recent amendment in Massachusetts is a notable exception. See "Supplementary Note" concerning legislation n 1917.

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so, the employer is to be liable for the reasonable expense incurred by or on behalf of the employee in providing the same." Substantially the same formula is found in the acts of Connecticut, Maryland, Minnesota, Indiana, Nevada, New York, Oklahoma, Texas, Wisconsin, Pennsylvania. The legal problem as to what constitutes the failure to provide medical aid is foreseen in a few acts. The Iowa act contains the phrase "if so requested by the workman, or anyone for him," and the Pennsylvania act requires application for medical aid to be made to the employer—phrases which literally interpreted and enforced may under certain circumstances furnish to the employer a loophole for escaping the cost of medical aid. That other reasons besides the employer's or insurer's failure to provide medical aid may justify the selection of the physician by the injured or by his kin is admitted in only one act—the Massachusetts Amendment of 1914 (Acts of 1914, chap. 708, sec. 1), which states that "where in a *case of emergency or for other justifiable cause* [italics are the writers] a physician other than the one provided by the association [insurer] is called in to treat the injured employee, the reasonable cost of his services shall be paid."

In several states in which the mining industry predominates, hospital funds have achieved considerable development. The cost of these is sometimes borne partly by employer and by employee; more frequently, entirely by a tax upon the latter; not infrequently the income from that tax exceeds the cost of the medical and hospital service provided for, and yields a profit to the employer. The acts of Colorado, Montana, and the defunct act of Kentucky specifically authorize the retention of these existing arrangements in lieu of the medical benefit provided by the compensation act. This retention of a well-organized system of medical aid would be very desirable, if it were accompanied by specific provisions that the cost should be borne by the employer, as is the intent of compensation, and by some requirements as to supervision over the quality of this medical organization. In the absence of such conditions the burden is partly shifted upon the wageworkers themselves. Specific mention of the money cost of medical aid, etc. (instead of the service

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in kind) is found in two states only—those of Ohio and West Virginia, both having systems of monopolistic state insurance.[1] The authorities administering the state insurance funds are required to "disburse and pay from the fund for such injuries such amounts for medical, nurse, and hospital services and medicines as it may deem proper" (Ohio formula, only slightly modified in the West Virginia act). In neither of these two acts is any authority specifically given to provide for a systematic organization of medical aid. Such an organization is authorized, though not required, by the Oregon act, which permits the administrative commission to "provide . . . . medical and surgical attendance . . . . and to contract therefor in its discretion . . . . or" "authorize employers to furnish or provide at the expense of the Commission . . . . such . . . . attendance."

In the face of this bewildering variety of provisions, requirements, and qualifying conditions certain tendencies manifest themselves in the acts collectively, and still more in their application as expressed in the action of employers and insurers and rules and decisions of commissions and courts. These tendencies are mainly two: (1) In the opinion of the legislators, it seems desirable that the employer or insurer have the choice of the physician. (2) It is inevitable, nevertheless, that in many cases that right be left to the injured, and the legal requirement be met in money and not in kind.

The entire problem of choice of physician has been so thoroughly discussed in Europe that the arguments for and against the employer's retaining the right have clearly crystallized, and they are equally applicable to American conditions: On one hand, it is claimed that:

1. The employer or the insurer is better able to select a competent physician.[2]

[1] At least in theory both acts permit self-insurance, under which employers may obtain authority to remain outside of the state insurance system. Most of these "self-insured" employers in West Virginia carry insurance with private casualty companies. The same situation obtained in Ohio until abolished by a special act, prohibiting casualty companies from reinsuring "self-insureds."

[2] "Inasmuch as the selection of the physician is wholly in the hands of the employer or his insurance carrier, the risk of falling into the hands of a quack is minimized" (California Industrial Accident Board, *First Report*, 1913, p. 13).

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2. The employer or the insurer, being required to bear the cost of medical aid, should be given the opportunity to reduce that cost by making the best terms possible with the physician.

3. The employer (or insurer for the same) is entitled to retain supervision over the injured's condition, which is most easily accomplished by leaving the choice of physician to him.

4. The physician selected by the injured employee may be tempted to promote malingering and prolong unnecessary treatment, thus increasing cost of compensation in a double way.

On the other hand:

1. The relation between physician and patient is personal, based upon confidence, and best results will be obtained by the injured (or his kin) selecting the physician.

2. The employer's physician may be unduly influenced to restrict the period of disability and require premature return to work, so as to reduce the cost of compensation.

3. The employer's physician combines the duty of a medical attendant with those of a supervising official, devoted to the interests of the opposite party. This creates a relation not conducive to the best professional results.

4. (This perhaps is less an outspoken argument than a silent cause of effort in favor of preserving the injured workman's right to choice of his physician.) It is claimed that the shifting of this right to the employer will concentrate the entire medical and surgical work in connection with accidents in the hands of a few physicians, possibly on a contract basis, and deprive the medical profession at large of a substantial portion of their practice.

Common fairness requires the admission that there is a certain amount of weight and equity in every one of these arguments on either side. The real issue is as to their comparative importance in the final selection of one uniform system, if such uniformity is possible.

Needless to say, no such uniformity exists. While almost all the acts, by direct legal statement or by inference, give to the employer the right of selection, the necessity for exception in certain cases has become obvious. The employer may fail to comply promptly with the legal requirement, and the injured's private

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physician must be called in. We have already indicated that in several acts this special contingency is provided for. Opinions as to what is prompt service will differ. Anxiety of the injured workman or among the members of his family may cause application to a physician before the employer's physician arrives. Shall change in medical attendants be insisted upon? In regard to this very practical problem numerous decisions by various boards and commissions have been made, usually in favor of the injured workman. The California Board ruled[1] that a request for treatment by an employee is unnecessary, that knowledge of injury is sufficient, and failure to provide aid charges the employer with the reasonable expense incurred by the employee. A similar decision was rendered by the Connecticut commissioners, who further said that a foreman's offer to dress the wound does not constitute a legal offer of medical aid.[2] The question of neglect was considered in a California case in which the insurance company's physician called on the injured on Tuesday, and not again until Friday. Meanwhile another physician was called in by the injured. It was ruled that the insurer is not justified in delaying medical treatment, that the interval between Tuesday and Friday constituted such a delay, and the insurer was ordered to pay the bill of the private physician.[3] On the other hand, in a case where the injured employed his own physician, and when the insurance company sent its physician four days after the injury refused his services, the bill of the attending physician was ordered paid only up to the time of the offer of medical aid.[4] In this case it was not considered unreasonable to ask the injured to change physicians. Such a change, according to the ruling of the same board, must be made, if at all, by the time it is necessary to change the first-aid dressing to a permanent course of treatment.[5] This, however, is modified by a previous ruling to the

[1] *Edward Frother* v. *Cornelius Griffin*, April 10, 1915; also *Annie E. Gardiner* v. *State of California Printing Office.*

[2] *William Gregory* v. *Merril Company* (Conn., October 5, 1914).

[3] *S. Jameson* v. *W. E. Bush and Maryland Casualty Company* (Cal., November 16, 1914).

[4] *C. Robertson* v. *Panama Trust Co. and New England Casualty Co.* (Cal., September 28, 1914).

[5] *L. B. Beer* v. *E. Hotchkiss and Royal Indemnity Co.* (Cal., January 27, 1915).

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effect that, if the injured employee's physician be forced at the beginning of the treatment to perform a "capital operation, it is improper to require him to change his physician immediately after that, and the physician selected by the employee is entitled to full payment."[1] If the employer agree that the injured workman select his own physician, the insurance company cannot waive liability for the medical bill by sending its own physician.[2]

Again, what constitutes a bona fide offer to furnish medical attendance? Posting a printed notice with the names of physicians does not in Massachusetts, especially when the injured is an illiterate foreigner who does not understand English.[3] Where, however, a bona fide offer of medical services was made by the employer or the insurer and was arbitrarily refused by the injured because of a preference for a physician of his own choice, many boards have denied the claim for payment of medical bills.[4]

The leaning of many industrial boards toward free choice of the physician is significant. As stated by the chairman of the Massachusetts Industrial Accident Board, though "under this act neither the injured man nor the employer has any right whatever to select his own physician; that is the exclusive duty and right of the insurance company" (the Massachusetts act being a compulsory insurance act), nevertheless, "by the co-operation of the Industrial Accident Board, and the various insurance companies insuring employers throughout the Commonwealth, we have a working agreement with them that has not the force nor the operation of the law. They have allowed injured employees to select their own physicians and, so far as I know, in the great majority of cases that working agreement is being carried out in good faith."[5] The Massachusetts Board went even farther and in its first report

[1] *Fred Matteoni* v. *Roberts and Clark and Pacific Coast Casualty Co.* (Cal., September 23, 1914).

[2] *L. B. Taylor* v. *Kissel Kar Branch and Massachusetts Bonding & Insurance Co.* (Cal., September 3, 1914).

[3] *Panasunk* v. *American Mutual Liability & Insurance Co.* before the Supreme Judicial Court of Massachusetts, Suffolk (105 Northwestern, 368, May 21, 1914).

[4] *City of Milwaukee* v. *Miller*, 144 Northwestern, 188 (Wis., October 28, 1913).

[5] Massachusetts Industrial Accident Board, *Bulletin No. 4*, April, 1913. "Medical Services under the Workmen's Compensation Act," pp. 5–6.

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specifically recommended the amendment of the act "so as to reserve to the injured employee his right to engage his own physician is he so desires."[1] While the legislature did not agree to go so far, probably out of fear of the organized employers' interests, provision was made for the payment of the injured workman's private physician, when called in "in case of emergency or for other justifiable cause;" subject to the approval of the Board and provided the charge for services is reasonable.[2] How broadly this clause concerning "justifiable cause" is interpreted is indicated by the statement of the Board early in 1913[3] that it "will approve reasonable bills where services were rendered by a physician selected either by the employee or employer," because of sufficient reasons growing out of the nature of the injury, personal dislike of the doctor, or upon other grounds.

Again, in California the Industrial Accident Commission permits free choice of physician, as far as this lies within its jurisdiction—namely, "in its administration of the State Compensation Insurance Fund it has deemed it expedient to accept the services of any licensed practitioner of medicine and surgery unless his services are known to be without value. The Commission does not believe that the fund, as a state organization, may exact the services of any certain group of doctors.[4] There is a very satisfactory understanding between the medical profession generally and the Industrial Accident Commission."

Finally, in Ohio the matter has been very definitely decided in favor of absolute freedom of the employee's choice. In the Commission's opinion "the law implied specifically that all awards were to be paid to the injured workman. This impliedly respects the right of the workingman to select his attending physician."[5] Accordingly the first of "the rules of the Industrial Commission of Ohio, governing procedure with respect to claims for medical

[1] Massachusetts Industrial Accident Board, *First Annual Report*, 1912–13, p. 41.

[2] Acts of 1914, chap. 708, sec. 1.

[3] Massachusetts Industrial Accident Board, *Bulletin No. 2* (January 1913), p. 11.

[4] *California Industrial Accident Commission Report*, January 1, 1913—June 30, 1914, p. 17.

[5] *Bulletin of the Industrial Commission of Ohio*, I (November 5, October, 1914), 21.

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expenses against the State Insurance Fund," adopted October 1, 1914 reads: "Each injured employee shall have the right to select any physician he may desire to treat his injuries."[1]

Indirectly the same situation, or a tendency in that direction, may be observed in other states. How else can the numerous provisions concerning regulation of medical fees by the administrative authorities (to be referred to presently) be explained? For if the employer or the insurance carrier who is to pay for the medical aid were to have the exclusive right to select the physician, then he would be in a position to agree in advance as to proper medical charge, and disputes should not arise. The situation evidently is different when the person employing the physician and the person responsible for the fee are different parties. How much uncertainty there is in the law on this subject the following language of the Rhode Island act aptly illustrates. "Section 5. During the first two weeks after the injury the employer shall furnish medical and hospital services and medicines when they are needed, the amount of the charge for such services to be fixed, in case of the failure of the employer and employee to agree, by the superior court."[2]

The reference to "services" would indicate that medical aid be furnished in kind, the employer selecting the physician, but the provision for disagreements between employer and employee presupposes that the employer makes money payments to the employee, the latter hiring his own medical attendant.

As a matter of fact, the situation lies not so much in the hands of the employer as in the control of the insurance carriers. Whether there is compulsory insurance or not, the vast majority of employers carry compensation insurance. The insurance carrier meets the medical bill. Practices of different companies differ, and even the same company may in certain localities make definite arrangements with certain physicians and in other localities let the cases be handled in the way of private practice. In this way the situation is somewhat modified. Needless to say, the company's representative cannot be on the spot when an accident occurs. Commissions and courts have shown a disinclination to enforce a change of physicians.

[1] *Ibid.*, p. 31.

[2] The Maine act contains almost identically the same provision.

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Serious cases are taken to hospitals, making such change impossible. The practical question for the insurance company is whether it should insist upon the employer's right of choice or leave it to the employee, neither of the two being financially responsible for the contract they might make. In this aspect of the situation there is not much enthusiasm for the employer's right of choice, because the rich man's doctor is likely to be also the more expensive doctor.[1]

This practical development of the injured employee's freedom of choice has emphasized, in the opinion of the insurers, the danger of excessive medical charges. Several compensation acts, especially the later ones, make special provision against it. Of course the money limits to the amount of medical aid to be furnished, especially when found side by side with the time limits, are really due to the same consideration. The assumption in the mind of the legislators is that the money limits will not further cut down the *amount of medical aid*, but the *size of the medical bill*.[2] Again, this principle might result in glaring injustice if the employer and not the employee chooses the physician. Supposing the physician so selected is a high-priced one and absorbs the maximum fee allowed by the law before the time limit is expired. Is the injured person to be deprived of his legal share of medical aid because the employer wouldn't or couldn't strike as good a bargain with the doctor as he might have himself? As far as the writer knows, there have been no decisions on this subject, though a very interesting legal point is involved.

A good many acts (especially those more recently enacted) endeavor to keep down the size of medical bills by definite provisions. Massachusetts, California, and Texas provide that the employer or insurer is only responsible for the *reasonable cost* of

[1] In reply to an inquiry from the joint committee of the A. F. of L. and N. C. F. one casualty company writes: "This company has never favored the doctor's contract whereby a company furnishes a doctor for every distinctive case. It uniformly permitted the employer or the injured employee to select his own doctor and finds that has proven the most satisfactory way to handle the matter." (*A. F. of L. and N. C. F. Report*, etc., p. 32).

[2] Practical insurance men, however, have often doubted the wisdom of these money limits, fearing these might have a directly opposite effect of establishing a "normal standard," to which doctors' fees may be adjusted upward.

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medical aid. In Maryland, New York, Oklahoma, Oregon, and Wisconsin the charges for medical treatment are subject to control by the administrative commission. In Maine the commission fixes the amount in case of disagreement between employer and employee, and in Minnesota and Rhode Island the same power, in the absence of a commission, is given to the courts; in West Virginia and Ohio (State Insurance acts) the Commission itself determines the amount of medical fees due for the treatment, while in a number of states (Connecticut, Hawaii, Maryland, Minnesota, New York, Oklahoma, and Vermont) the obligations of the employer or employee are "limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living, when such treatment is paid for by the injured person."[1]

In compliance with this tendency commissions of several states (New York, Ohio, California, etc.) have adopted and published so-called "medical-fee schedules," definite standards of payment for certain injuries or certain services,[2] which are either compulsory or only suggestive in character.

These schedules are too extensive to be printed here in full. The amounts allowed for certain operations are very much smaller than the prosperous American middle class is wont to pay, even smaller than the poorer American is forced to pay if he has moral scruples or aesthetic objections against becoming an object of medical charity. Few self-respecting surgeons of any standing will agree to perform a laparotomy (operation necessitating opening of abdominal cavity) for $50, or amputate a leg for $25. This fee, moreover, is inclusive of all after-treatment, according to the New York schedule, while in Ohio separate fees are allowed for the latter.

[1] No references to the cost of medical aid are contained in the acts of the Canal Zone, Colorado, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Montana, Nebraska, New Jersey.

[2] For the Ohio schedule or "Fee Bill," see *Ohio Industrial Commission Bulletin*, October 1914, pp. 24–25. The New York "Fee Bill" is printed in the same *Bulletin*, p. 29; see also *California Industrial Accident Commission Report*, January 1, 1913—June 30, 1914, p. 17. A very interesting comparison of the medical-fee bills proposed in the states of New York, California, Oregon, Ohio, and West Virginia is to be found in the *American Medical Association Bulletin*, Vol. X (May 15, 1915), No. 5, pp. 384–87. It is interesting to observe that there is much more uniformity between these different fee schedules than exists between scales of compensation of the injured workmen.

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Such fee schedules are operative in few states. Their enforcement requires energetic action on the part of the Commission, conferences with the medical profession, and various compromises. In Massachusetts the acceptance of the principle of moderate fees was accomplished by the extra legal promise to grant the injured workman the right of full choice of physician. In Ohio there was said to be an implied threat by the Commission of establishing a state medical service. And of course in those states where specific authority was conferred upon the Commission to pass upon the reasonableness of medical bills this contains ample power to enforce a fee bill.

Wherever accepted, the fee bills did not fail to call forth energetic protests from the medical profession.[1] Even when the fee bills were worked out in consultation with representatives from medical organizations individual members of the profession were frequently dissatisfied. The medical profession was inclined to resent the implication that it was not a true judge of the reasonableness of the medical bill. In one such criticism, quoted by the Ohio Commission, a president of a large medical society in Ohio states that in pronouncing doctors' bills to be exorbitant the Commission adds insult to injury, "that never in the history of the world was there a more autocratic law . . . . and its application is an insult to the medical profession," and that "the Commission's action places the physician's fees upon a lower level than has ever been known before."[2]

The Commission denies that this represents the general attitude of the medical profession. Yet the very issue of the *Bulletin* quoted, of some 40,000 words, addressed to the medical profession and containing a very urgent plea in defense of the Commission's

[1] The Commission has approved a fee schedule which is considerably lower than the average fee charged for similar work in private practice. This at first met with very considerable opposition on the part of the profession. . . . . The matter was taken up before the Medical Society of the State of California in April 1914. . . . . The fee schedule was adopted. Since that time the Commission . . . . has secured an understanding . . . . and the great majority of the County Medical Society units have subscribed to the arrangements (California Industrial Accident Commission, *First Report*, 1914, p. 18).

[2] *Ohio Industrial Commission Bulletin*, Vol. I (November 5, October, 1914).

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attitude to the medical profession, the effort to set forth various evidences in support of the claim that the Ohio physicians receive more money for their compensation work than those of any other state—all this is eloquent evidence that, notwithstanding all the supposed liberality of the Ohio Commission, the medical profession of the state was not easily satisfied. In New York the fee bill prepared by insurance companies was accepted by a special compensation committee of the state Medical Society and by the state Compensation Commission as a fair estimate of proper fees. It was agreed that for one year it would present a fair basis for trial. It had no binding force upon any physician who did not individually sign an agreement with an insurance company. Nevertheless, it very soon became evident that it was objectionable to the majority of the profession, because the insurance companies interpreted it "a maximum fee bill, not a minimum fee bill" (*Sic !*) and it was repudiated by the Medical Society of the state in the spring of 1915.[1] Undoubtedly enough physicians may be found willing to undertake the work at the rates indicated, because the range of variations in the rate of remuneration for medical work is very great, but it is probable that the more expert practitioners in private practice do not as a rule court compensation work at the "fee-bill" rate.

The size and importance of the medical profession and the great importance of the physician's part in any plan of health insurance make the problem of the medical bill a social problem, irrespective of the business aspects as far as the medical profession itself is concerned.

In arguing in favor of a reduced and more or less uniform scale of compensation for the physician's work, many commissions pointed out that the basis of payment in private practice among the middle class is inapplicable. In the language of the Ohio Commission, the medical fees must be considered "on an industrial accident basis."[2] The legal formula for the same point of view is "such charges as prevail in the same community for similar treatment of injured persons of a like standard of living, when such

[1] *American Medical Association Bulletin*, May 15, 1915, p. 388.

[2] *Ohio Industrial Commission Bulletin*, October, 1914, p. 15.

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treatment is paid for by the injured person." Almost invariably, unless paid for by the employer or the casualty company under liability conditions, the injured person was treated in the hospital as a charity patient. This fact—that physicians were forced to give a great deal of service gratuitously—is quoted by the various commissions in defence of a moderate fee under compensation conditions.[1] Of course the standards of medical fees adopted appear so small largely because the comparison is made with medical fees in middle-class private practice, rather than with the income that could be derived directly from the wageworkers for surgical work. The nominally liberal standards of fees for surgical and expert special work in this country obscure the fact that the average income of the medical profession is a very modest one. The number of large incomes in the profession is small. The loss of time because of competitive conditions, the infrequency of the fees, and the necessity of performing a large amount of labor gratuitously, either for the sake of experience or for its advertising value, are factors which substantially depress the average income of the physician. The few exceptional incomes have blinded many members of the medical profession to the fact that for the majority of its membership the old conditions of private practice among the workingmen are of doubtful economic value. Proper organization would permit the furnishing of very expert service at a very much lower unit cost.

Economy of cost, moreover, is not the only consideration. The quality of service administered at present by physicians of all degrees of efficiency is by far not as high as it ought to be. One evidence of it may be found in the frequency of infections, to which many state commissions have called attention. Says the California Industrial Accident Commission in an early report: "A glance at the list of infections would indicate that either the employee is negligent or else does not receive proper care. Several amputations have been made because of improper care, and they have been always proven more expensive in the long run than if the very best and most expensive aid had been secured at the

[1] Medical men can the more readily co-operate with us because, whereas they have heretofore been required to treat many cases gratuitously, hereafter they will be paid in all cases, but upon a somewhat modified schedule of charges (California Industrial Accident Board, *First Report*, 1913, p. 13).

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beginning. There are two cases on record where men died as the result of a sliver wound resulting in infection."[1]

The Wisconsin Commission found the matter of sufficient importance to issue a special bulletin devoted to it.[2] The following data quoted in the *Bulletin* indicate the serious nature of the problem.

> Of the total number of accidents reported from September 1, 1911, to September, 1913, 721, or 4.8 per cent, resulted in infection of the injured members. The accidents themselves were, with few exceptions, trivial and would have resulted in but very few days of disability each if properly treated. As it was, over 12,500 working days were lost, or an average of 17 days per case. In 5 cases the injury became so serious that the patient died. In 4 other cases the injured members had to be amputated to save the patient's life. Another case resulted in permanent stiffness of the injured person's entire body.

While a certain number of infections may have been unavoidable, it is hard to escape the suspicion that medical aid, administered, as it is, in a haphazard fashion, was far from being always satisfactory. Neither the injured employee nor the employer always appreciates the necessity for prompt and efficient medical aid, and the medical service obtained is not always of the best. As stated bluntly by the California Commission, "either the employee is negligent or else he does not receive proper care."[3] Of course the situation must be still worse if no medical aid is given.

In view of the total absence of the medical benefit in the Washington act, we are not surprised to read in one of the reports of the Industrial Insurance Department of that state: "We have a great many bad results, even partial permanent disabilities and some deaths as a result of neglect by the claimant not giving proper care to some trivial injury."[4] In one year in that one state there were recorded 650 cases of infection; the total time loss in these cases was over 13,500 days, and the total cost was $21,128.[5]

[1] *California Industrial Accident Commission Report*, 1913–14, p. 66.

[2] *Wisconsin Bulletin of the Industrial Commission*, Vol. 2m (November 11, 1913), "Infections and Their Prevention."

[3] *California Report*, 1914, p. 66.

[4] *Second Annual Report of the Washington Industrial Insurance Department*, 1913, p. 63.

[5] Industrial Insurance Department, *Second Annual Report*, 1913, p. 52.

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Infections, especially if delayed, arising while medical treatment is being given, may serve in some cases as evidence of inefficient medical aid. But there may be other shortcomings of the system of medical aid, less obvious though equally grave in their results, and these deal with the important group of accidents resulting in permanent disability.

As is shown by the Standard Accident Table (or by any careful accident statistics, whether in this country or in Europe), the vast majority of accidents result in temporary disability only, and recovery is complete. Experience in Massachusetts shows that some 40 per cent of all accidents reported cause no loss of time or a loss of not over 1 day. Though these trivial accidents are eliminated in the writer's Standard Accident Table, some 94 per cent of the accidents in that table are of that temporary character only. But the gravest problems are created by the remaining 6 per cent, and, excepting the fatal accidents, amounting to about 1 per cent, the 5 per cent (4,875 per 100,000, according to the Standard Table) of cases of permanent disability. According to the New York act's scale of compensation, the average cost of a case of permanent disability would appear to be equal to about 124 weeks' wages, and that of a case of temporary disability to two-thirds of a week's wages, so that the cost of a case of permanent disability would be equal to that of 186 temporary cases, and the (comparatively) high cost of compensation insurance in the state of New York is due entirely to these cases.

Permanent disability is seldom absolute and total. In the Standard Accident Table only 133 cases per 100,000 accidents were assumed; and in the light of our short experience it would seem as if our strict interpretation of the term "total permanent disability"[1] would result in a still smaller number of cases of this character. In cases technically known as partial permanent disability the question of the quickest and most complete restitution of earning capacity becomes one of great economic and social importance.

These cases may be divided largely into two groups, both on surgical grounds and according to their method of treatment, in

[1] It is probable that this strict interpretation is due to a much more liberal scale of compensation for total permanent disability as compared with partial permanent disability.

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American compensation acts: They are the so-called dismemberment cases—largely amputations and loss of an eye. The medical or rather surgical problems are rather simple. It is necessary that the amputation be made efficiently, that infection be avoided, that the stump be as serviceable as possible. There can be no question as to the desirability of artificial limbs. But beyond that, medical science can do little.

In most states, as is well known, these cases are compensated according to a table of specific benefits, for varying periods, according to the degree of dismemberment. This is explained on the theory of rehabilitation, on the underlying assumption that after a certain time the earning capacity of a worker losing fingers or a limb may be entirely re-established.

In certain cases this undoubtedly occurs. How far the theory and the methods of compensation based upon it are justifiable, as applied to all cases of dismemberments, is a broad problem which cannot be discussed here in connection with medical aid. The point we wish to emphasize here is that the process of rehabilitation after the loss of a part or after a clean and conservative amputation is a problem not of medicine or surgery, but of industrial education. There remain, however, that group of injuries technically known as permanent-partial-disability-not-dismemberment, a group not yet sufficiently understood in this country. A fracture may fail to unite properly for various reasons, which may result in a false union, making the limb almost useless; or it may unite improperly, leaving a permanent limitation of motion. It may include a joint, and the injury result in the stiffening of an important joint, as an elbow or knee. Even a stiffened finger joint may be an important matter to a workman. A compound comminuted fracture may heal after prolonged treatment, but leave considerable shortening due to the excision of some bone. Severe dislocations with lacerations of joint capsules and ligament often make the joint permanently weak; infections penetrate deeply and affect bones, resulting in excision of bone, which leaves the finger weak and with greatly impaired usefulness. Injuries to nerves may result in atrophies of certain joints of the body; severe general shocks may leave permanent nervous disorders. Mental disorders as a result of local

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injuries to the head are not common, but not unknown. Internal injuries may lead to all kinds of prolonged ailing, etc.

It is evident that in all these conditions scientific medicine and surgery may accomplish a great deal. From the point of view of an industrial worker the treatment cannot stop when it very properly might in dealing with a more prosperous group. A slight limitation of the motion of the wrist, a slight weakening of the knee, is a matter of small concern to a professional or business man. To a wageworker it may mean the difference between economic self-dependence and pauperism. To remove the evil results of these injuries, they must first of all be clearly recognized by all concerned; and secondly, medical and surgical aid must be given generously, almost lavishly, and not sparingly and grudgingly; and it goes without saying that it must be the highest grade of expert medical aid. For, after all, isn't this the greatest service compensation can perform?

Much has been said about the preventive effect of compensation. It is claimed that, by placing a charge upon industry, it will create a strong economic motive for safety devices and efforts for prevention of accidents. "Merit rating" in compensation insurance[1] meets the charge of discrimination on the same ground of strengthening this economic motive. The well-known safety engineer and author of the Universal Analytic Schedule of Merit Rating, Mr. C. M. Hansen, created the slogan that "Compensation is a palliative; accident prevention is prophylaxis."[2]

A similar aphorism, introduced, I believe, by Mr. Walter Cowles, vice-president of the Travelers Insurance Company, reads: "An accident compensated is an apology; an accident prevented, a benefaction." In emphasizing the importance of early and proper treatment of wounds to prevent infection, the Wisconsin Com-

[1] For a system of credits and charges for superstandard risk, substandard conditions of safety in the plant, see several papers on the subject, or "merit" or "schedule rating" in the *Proceedings of the Casualty Actuarial and Statistical Society of America*, Vol. I (May, 1915); papers by Mr. Charles Hansen, A. W. Whitney, A. H. Mowbray, L. Senior, and the writer.

[2] "The Importance of Accident Prevention in the Solution of the Problem of Accident Compensation," *Transactions of the Commonwealth Club of California*, Vol. VII, No. 5, p. 505.

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mission, nevertheless, concludes: "More important, however, than preventing infection after an accident has happened is the prevention of the accident itself."[1]

There is no intention to deny any of these statements. Their truth is so evident as to be almost bromidic. But, pragmatically speaking, the overemphasis of this formal truth may have, and perhaps has already had, some undesirable results. The theory of compensation legislation is based upon the frank recognition of the fact that it is impossible to prevent all accidents, and that, statistically, they are an inevitable accompaniment of economic activity. Viewing compensation as a sort of makeshift or apology is not conducive toward progressive comprehensive standards of compensation legislation. It is well to encourage the prevention of disease through measures of public hygiene, but the science of curative medicine must not be neglected at the same time.

Of course the campaign of safety prevention must depend upon the hope that a certain proportion of accidents is preventable, and surely in this country, with its notorious disregard of human life, the irreducible minimum has not yet been reached. Safety engineers are almost unanimous in their very sanguine expectations of reducing the accident frequency in this country. But, unfortunately, European experience does not furnish any evidence in support of extravagant hopes. Even in Germany, with its very efficient organization of employers' trade associations and thirty years of active safety work, the number of accidents reported has not shown any tendency toward a very rapid decline. In fact, the number of accidents reported has been rapidly increasing,[2] not only absolutely, but also relative to the number of persons employed. The writer is aware of the fact that the number of accidents recorded (or,

[1] *Bulletin of Industrial Commission of Wisconsin*, Vol. II, No. 11 (October 20, 1913), "Infections and Their Prevention."

[2] H. G. Villard, *Workmen's Accident Insurance in Germany*, pp. 21–22:

INDUSTRIAL ACCIDENTS IN GERMANY

Year	Number Reported	Per 1,000 Workmen
1891	162,674	31.94
1901	319,576	46.42
1911	520,229	52.83

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perhaps more accurately, the number of accidents reported) is not a safe measure of the real accident frequency. Prejudiced use has frequently been made of these figures by the opponents of the German social insurance system to prove that "in spite of all preventive measures, the accident rate is higher than ever." The statistics of accident reports is so much influenced by the constant improvement in reporting that any deductions of that character are not very reliable. But the figures do seem to offer a "fair basis for the conclusion that no striking reduction in accidents has been accomplished by efforts at prevention in Germany."

The entire problem has been very carefully analyzed by Dr. H. J. Harris in his well-known study on "The Increase in Industrial Accidents"[1] on the basis of German, Austrian, and British data of compensated accidents. The comprehensive statistical material brought together by him indicates the absence of any striking results of accident prevention. The number of accidents resulting in death, permanent disability, or temporary disability of over 13 weeks' duration in Germany in 1897 was 8.07 per 1,000 full-time workers; in 1902, 9.19 per 1,000; and in 1908, 9.48 per 1,000. In Austria the number of accidents resulting in death, permanent disability, or temporary disability of over 4 weeks' duration was in 1890, 8.2; in 1900, 15.6; in 1907, 18.3 per 1,000 workers. While careful statistical data for Great Britain are lacking, a special departmental committee on accidents has come to the conclusion that "the accident risk for ten years, 1897–1907, has probably remained almost constant, and that any increase due to the greater use of machinery and greater pressure on the workmen has been counteracted by improved inspection and the greater care of the employers, resulting from the provisions of the Workmen's Compensation act."[2] These facts are not quoted to discourage or to discredit the work of factory inspection and the enthusiasm of the safety movement. It is difficult to imagine to what horrors the hazards of modern industry might rise if it had not been for the mitigating effects of safety engineering. But the conclusion is

[1] *Quarterly Publications of the American Statistical Association*, No. 97 (March, 1912), pp. 1–28.

[2] See Harris, *op. cit.*, p. 27.

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inevitable that the compensation of industrial accidents is much more than an apology or a palliative, and is, of necessity, a permanent feature of economic relations. It is quite probable that in the United States the sensational safety campaign will appear to have had more tangible results, because the situation in industrial safety was so very much worse at the beginning of the compensation movement. The most complex and most hazardous machinery of production in this country has been introduced without the salutary influence of compensation legislation, which has existed in Germany for over thirty years. But, after all, the comparatively disappointing results of safety measures need not appear so difficult of explanation when it is remembered that only a small proportion of accidents is due to complex machinery, with which safety engineering is largely dealing. German accident statistics indicate that only 25 per cent are due to machinery, and curiously enough such scant American data as are at present available seem to show substantially the same proportion. And so long as the human machine is not a perfect machine, workmen will fall down ladders or into shafts, drop heavy objects, overstrain themselves, let chips fly, and cause industrial injuries to themselves or to fellow-workers.

Dr. Harris' study establishes, however, other important conclusions. During the short period of twelve years, 1897–1908, the proportion of fatal accidents per 100,000 full-time workers in Germany decreased from 82 to 76; the proportion of cases of total permanent disability, from 12 to 7; the proportion of cases of permanent but partial disability, from 411 to 370. Adding these three categories, which constitute the serious accidents, their relative frequency has decreased from 505 to 453 per 100,000 full-time workers. Similar tendencies may be observed in Austria and Great Britain. Dr. Harris summarizes these tendencies in the following succinct statements: "In Germany, Austria, and Great Britain the serious accidents—namely, those causing death or permanent disablement—show a tendency to decrease. . . . . The progress in the movement for reducing the risk of industry has resulted in distinctly reducing the risk of death and of permanent disablement, but has not yet diminished the risk of temporary disablement."[1]

[1] *Ibid.*, p. 27.

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These interesting conclusions have been widely reprinted and are almost universally accepted. But just exactly what do they mean? How can safety engineering be specifically directed at causes of accidents resulting in death and permanent disability without affecting the many more numerous accidents resulting in temporary disability only? Outside of drowning, explosions, etc., all kinds of injuries result from each and every cause. It seems to us very much more likely that we are dealing here with the effects of preventive (as well as curative) medicine, rather than those of safety engineering. It is true that medicine and surgery do not step in until after the accident has occurred, but it is preventive, nevertheless, because the full extent of injury depends just upon the character of the medical interference. It is, therefore, with perfect propriety that Dr. Paul Kaufmann, president of the German Imperial Insurance Office, devotes to the various problems of medical care more than half of his study of "The preventive Influences of the German Social Insurance System."[1] In sharp contrast to the usual American disregard of the medical problem or the exaggerated fear of its expected cost, the German expert emphasizes the necessity of thorough medical aid in the following strong statements:

> In so far as it proves impossible to prevent industrial accidents, it is necessary to take care that their results be minimized as far as possible. Above all it is important that efficient first aid be rendered to the injured. Very often the fate of the injured depends upon the first dressing and his first removal to a safe place. These often prove decisive, not only for his survival, but also for the preservation of his health, his will power, and capacity for productive labor, and hence for his value to the welfare of the country.[2]

But first aid does not meet the entire problem. "When the injured person's life has been saved and his immediate needs have been taken care of, an effective course of treatment must be undertaken as promptly as possible for the purpose of re-establishing his earning capacity."[3]

The significant note of these statements is that they go beyond the mere quantitative measurement of "reasonable medical aid," a purely negative attitude assumed by even the best American

[1] *Schadenverhütendes Werken in der deutschen Arbeiterversicherung*, von Dr. jur. u. med. Paul Kaufmann, Berlin, 1913; see pp. 13–21, 47–57, 57–76, 85–94, and 94–118.

[2] *Ibid.*, p. 47. [3] *Ibid.*, p. 57.

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compensation laws, and emphasize its qualitative character, to be kept up to the necessary standard of efficiency by constructive legislation and practice through thorough organization, as economical as possible, but as costly as necessary.

Some appreciation of the importance of such preventive constructive measures and their financial value are shown by the American compensation insurance business, though not by American compensation legislation. Mr. Hansen's system of schedule rating, which is almost universally used in workmen's compensation insurance in this country,[1] provides for a "credit" or deduction of premiums by 1 per cent "where efficient means for first aid to the injured is furnished by the employer on the premises, such means consisting of first-aid medical cases, splints, stretchers, etc., and the same kept in an easily accessible place or places, with persons properly instructed to apply same until the arrival of expert medical help;" "where, in addition to the foregoing, a nurse and dispensary is maintained on the premises during all working hours, a credit of 2 per cent of base rate" is provided for.

It is impossible, with the present paucity of statistical material, to ascertain how near these allowed credits are to the actual money value of properly organized first aid. Personally, the writer thinks that, taking the entire field of safety engineering, the proper organization of first aid is of much greater importance than guards upon some dangerous machines, and that on the whole more damage is done through infection of trivial wounds than, say, explosion of boilers. But the absolute justice of the premium charge and discount is a matter of very much smaller importance than the stimulus given to the organization of medical aid by these discounts. As to the positive effects of these discounts, no information, unfortunately, is available. It does not seem likely that a saving of 1 or 2 per cent on the cost of compensation insurance (which altogether may amount to a very small percentage of the pay-roll—in manufacture, seldom over 3 per cent, and often less than 1 per cent, of the pay-roll) would to any extent influence the factory rules or customs of an establishment.

[1] Carl M. Hansen, *Universal Analytic Schedule for the Measuring of Relative Work Accident Hazards in Manufacturing Industries*, April, 1914, p. 20.

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The tendency of this effort, however, is characteristic. Upon the same tendency the whole system of schedule, or merit, rating is based. It is the old, hackneyed, and naïve theory of the abstract "economic man." Man acts largely from economic motives. Hence, if a certain mode of action appears desirable, it is only necessary to discover an economic motive for such action and furnish that motive. The cost of compensation insurance is an economic burden. The desire to relieve it is a healthy economic motive. If discounts from this cost are offered for improvement of industrial safety and hygiene—presto—all has been done to accomplish such improvement, and no further efforts are necessary. The representatives of the Workmen's Compensation Service Bureau, through whose efforts merit rating has been introduced, are fond of stating boastfully that they have "commercialized safety because that is the surest way to realize it." What is forgotten in this enthusiasm for the wisdom and efficiency of the economic man is his inertia, his failure to move unless the economic reward promised is sufficiently large. Moreover, shall we be ready to forego safety and hygiene, unless they prove to be sources of profit to the individual employer? Social standards must be based upon a broader principle than that.

In Germany, for instance, the measures for efficient medical aid, though perhaps backed up by the same economic motive, are, nevertheless, carried through in compliance with a well-defined social policy. The insurance carriers issue definite regulations, whose sanction is compulsory as far as individual employers are concerned. A detailed description of these measures may be found in Dr. Kaufmann's study, quoted above. The possession of materials for dressings is compulsory, prizes are offered for the saving of injured persons, first-aid stations are organized under direct contract of the insurance carriers, regulations are issued requiring workmen to stop work and apply for dressings in case of injuries ever so slight. In large establishments the presence of persons competent to give first aid is required, and courses of instructions in first aid are organized. Co-operation between the insurance carriers and the Red Cross has been accomplished in many localities since 1910. After an understanding reached on

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April 20, 1910, between the Association of the "Berufsgenossenschaften" and the German Red Cross, the latter furnishing the organization of courses in first aid, and the employers assuming to furnish the personnel of the classes of instruction, within the brief period from January, 1911, to September, 1912, 3,370 wageworkers graduated from such courses.

This and similar measures refer mainly to first aid. But subsequent treatment was not neglected. The organization of compensation in Germany, which leaves the first 13 weeks of treatment to the sick-insurance organizations, offered some difficulties, but these were overcome. Even as far as this preliminary period is concerned, medical aid is organized and in many larger cities reaches a high degree of efficiency. But it is recognized that the insurance carriers, who must take over the serious accidents at the expiration of 13 weeks, have a deep concern in all efforts for restitution of working capacity. The possibility of legal limit upon the amount of medical aid is not even considered. Instead, the "Employers Associations" are authorized to step in for the purpose of granting the best possible surgical aid, even during the waiting period. A circular of the Imperial Insurance Office, issued on December 14, 1911,[1] announces that "prompt aid is more important than long deliberation. Money benefits to the injured do not constitute the highest duty of the trade associations. More important it is to establish their capacity for productive effort and through it the joy of working as promptly and as completely as possible."

Hospitals and sanatoria with expert medical staffs of the highest efficiency were established by many trade associations where the facilities of the sick-insurance associations were insufficient. The cost of medical aid during the waiting period of 13 weeks has increased from 478,552 M. ($113,895) in 1896 to 1,228,368 M. ($292,355) in 1911.[2] The total cost of medical and hospital treatment and appliances granted after the expiration of the 13 weeks' period (at which time, under American acts, with few exceptions, no more medical aid is due) to the German trade associations in twenty-five years (1885–1911) was 129,501,925 M. ($30,721,458).[3]

[1] Kaufmann, *op. cit.*, p. 63. [2] *Ibid.*, p. 68. [3] *Ibid.*, p. 69.

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General hospitals, special surgical and orthopedic hospitals, and sanatoria for nervous diseases have been constructed and are being supported by the trade associations. How thoroughly these institutions are equipped is well illustrated by the biting remark of Dr. F. Friedensburg in his severe arraignment of the German insurance system, so well known to the American student:[1] "There is no more need for such buildings to be homes of luxury than there is for the business offices of the insurance carriers to be palaces." If it is remembered that the trade associations are managed entirely by employers and at their own expense, it is scarcely probable that unnecessary comforts have been provided, and even Dr. Friedensburg has been forced to admit that: "No one can object in the least to the fact that these hospitals were equipped in the most appropriate and practical manner, and that without regard to expense the most modern achievements of skill, architecture, industry, and medical science were installed; nor can anyone cavil at the lavishing of the most whole-hearted care for the welfare of the inmates." And an expert German surgeon announces the basic principle of this entire policy in the succinct statement: "Time and cost are no more matters of decisive importance in the treatment of injured. Only the best is good enough for the purpose of achieving their rehabilitation."[2]

And the results do not fail to justify these methods. It was stated, e.g., at the International Medical Congress for Treatment of Industrial Injuries at Dusseldorf in 1912, that the average duration of disability from fracture of a leg under treatment by the trade association has been reduced to less than 4 months, as against 10 months when the association did not take charge of the case until the expiration of the waiting period.[3]

Even broader statistical evidence of the efficiency of the German system exists. Much has been written and said in this country concerning the gradual rehabilitation of persons seriously injured, from the resulting degree of disability; and our very crude way of compensating the gravest injuries by a schedule of specific benefits

[1] See Friedensburg, *op. cit.*, p. 25.

[2] Dr. Rieder, quoted by Dr. Kaufmann, *op. cit.*, p. 70.

[3] Kaufmann, *op. cit.*, p. 68.

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is based upon that presumption. But in case even of grave injuries, short of dismemberment (i.e., loss of limb or part of limb) their permanent character remains altogether unrecognized.[1] When even the New York State Insurance Fund is ready to announce that out of 1,800 accidents there was not a single case of permanent-partial-disability-not-dismemberment (i.e., not a single case of

TABLE I

RESULTS OF 65,205 INDUSTRIAL ACCIDENTS OCCURRING IN 1904 AND CAUSING DISABILITY OF MORE THAN 13 WEEKS' DURATION*

Condition	Percentage Distribution of the Persons Injured, According to Their Observed Condition in Successive Years			
	1905	1906	1907	1908
Death	7.63	7.81	7.96	8.06
Total permanent disability	0.93	0.80	0.78	0.81
Partial permanent disability with loss of earning power during the year:				
Under 25 per cent	25.90	25.38	24.60	24.17
25–50 per cent	12.74	10.97	10.07	9.27
50–75 per cent	3.80	3.48	3.18	3.01
75–100 per cent	1.83	1.29	1.15	0.95
	44.27	41.12	39.00	37.40
Temporary disability with loss of earning power during the year:				
Under 25 per cent	19.67	14.14	10.59	8.15
25–50 per cent	3.93	2.14	1.39	0.98
50–75 per cent	0.50	0.23	0.16	0.12
75–100 per cent	0.48	0.17	0.15	0.11
	25.58	16.68	12.29	9.36
No loss of earning power	22.59	33.59	39.97	44.37
	100.00	100.00	100.00	100.00

* Data from *Bulletin of the* (U.S.) *Bureau of Labor*, January, 1911, p. 70.

stiffening, or shortening, or loose joint, or false union, or paralysis of muscle, or weakening of tendon, etc.) no testing of the rehabilitation theory will be possible for a long time.

In Germany, however, these cases of partial but long-time reduction of earning capacity are readily recognized, and active efforts toward accelerating recovery are made. In Table I may

[1] See discussion concerning this in I. M. Rubinow's *Standard Accident Table*, 1915, pp. 21–26.

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be found an indication of the results accomplished, based upon a detailed study of 65,205 accidents of over 13 weeks' duration occurring in 1904 and their results toward the end of four years in succession.

Notice the persistent increase in the number of complete recoveries, the reduction in the number of cases of permanent partial, and even permanent total, disabilities, indicating the splendid results of systematic and persistent treatment. Still more significant is a comparison of similar analyses of accidents for 1896 and 1904, indicating a substantial improvement in these results.

TABLE II

PERCENTAGE OF CASES OF COMPLETE RECOVERY FROM INDUSTRIAL ACCIDENTS IN 1896 AND 1904*

Complete Recovery	Year in Which Accident Occurred	
	1896	1904
At the end of the year of the accident	20.82	22.59
During the following year	7.55	11.00
At the end of the following year	28.37	33.59
During the second following year	4.31	6.38
At the end of the second following year	32.68	39.47
During the third following year	2.41	4.40
At the end of the third following year	35.09	44.37

* Data from *Bulletin of the* (U.S.) *Bureau of Labor*, January, 1911, p. 70.

It is true that the details of medical aid in Germany are closely interwoven with the entire organization of compensation insurance, and cannot perhaps be blindly imitated in this or in any other country. But the underlying principle, the appreciation of the great social value of thorough and expert medical aid, is one of universal application. It is, unfortunately, this appreciation which in this country is yet largely lacking.

We have shown this to be so, as far as most acts and also the earlier private studies and official reports are concerned. But even in more recent efforts to establish standards of compensation the same fault may be found. Mr. Magnus W. Alexander, an expert in industrial relations, who was largely responsible for the Massachusetts act and who has been extensively consulted with regard to

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compensation legislation in other states, admits that "the importance of prompt and adequate medical attention to the injured can hardly be overestimated. The employee should receive immediate and skilful medical care to ameliorate his suffering and to restore him quickly and without permanent impairment to complete usefulness."[1]

Nevertheless, his "standards" in regard to medical aid read as follows: "The employer should be obliged to furnish, and injured employee to accept, adequate medical care during first 30 days." "Employer should be permitted to continue adequate medical care and injured employee should be obliged to accept it."

The *Draft of a Uniform Workingman's Compensation Act*, prepared by a committee at the Conference of Commissioners of Uniform State Laws in 1913, recommends (sec. 9) reasonable services for 14 days only.[2]

The National Civic Federation in its *Tentative Draft*, published as late as December, 1914, recommends the rather indefinite standard of "all medical and surgical aid and assistance that may be reasonably required, for a reasonable period of time,"[3] but in view of the variety of existing standards, as demonstrated in the table on page 588, this obscure and indefinite announcement does not carry things very much farther.

Even the American Association for Labor Legislation, always in the advance guard of progressive labor legislation, in its "Standard of Workmen's Compensation Laws" asks for "necessary medical, surgical, and hospital services and supplies for a reasonable period (to be determined by the Accident Board)," without specifically mentioning the entire period of disability, and while the Accident Board is to be with power "to establish a schedule of physicians, and hospital charges and to control all charges," so as to protect the employer from excessive charges, nothing is said about any constructive measures to guarantee to the injured employee service that is thoroughly competent. The so-called Kern-McGillicuddy

[1] M. A. Alexander, *What Should Be the Principal Provisions of a Workmen's Compensation Act?* 1915.

[2] Conference of Commissioners of Uniform State Laws, 1913.

[3] *Tentative Draft*, etc., p. 4.

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act for compensation of the employees of the U. S. Government, which was drawn by the American Association for Labor Legislation and comes perhaps nearer than any other act to being a model compensation act, grants "medical aid immediately after an injury" and "for a *reasonable* time thereafter," but makes the valuable suggestion that the U. S. medical officers and hospitals be utilized for that purpose, which is perhaps the only legislative suggestion of an organized medical service.

It is but seldom that in American compensation literature, official or otherwise, as clear an appreciation of the importance of medical service is found as that in the first report of the California Industrial Accident Board (now Commission): "The first and best compensation that can be afforded to an injured workman is to place at his disposal the *best* skill and care of the medical and surgical science of his time, for the purpose of restoring him, as nearly as possible, to the physical condition he was in before he was injured.[1]

How much this strong tendency to limit the efficiency of medical and surgical aid depends upon the fear of excessive costs and the desire to protect the employers against these excessive charges has already been explained. But it is not amiss to remember that accident compensation has not been established primarily for the purpose of protecting the employer and of making things cheaper. The direct object of legislation is the injured employee and those dependent upon him. Indirectly the purpose is a social one—to prevent or at least to minimize the large amount of social waste which at present accompanies our processes of production. If the subject of curing the injured employee and of re-establishing, as far as possible, his earning capacity is sufficiently important to place a considerable burden upon industry, surely inadequate standards of medical aid should not stand in its way. An enormous amount of very expert, very specialized, medical service is required to accomplish this result; a large proportion of this treatment must be of the institutional kind. Consideration of economy and still more consideration of efficiency require that this service should be furnished in a systematic way, not in the haphazard manner in which it is done today, dependent upon the intelligence of the work-

[1] *California Industrial Accident Board Report*, 1913, p. 13.

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man or the honesty or generosity of the employer or insurance company.

The Ohio Industrial Commission's study of medical aid, frequently quoted here, sees that difference, but only as it affects the rate of pay for medical aid, and not its organization. But the German students of, and workers in, the field of social insurance fully recognize the difference between private medical practice and medical aid in social insurance.[1] As the well-known German expert in social insurance, Dr. Klein, has well stated: "Medical aid in social insurance differs from ordinary medical treatment in one very important feature. Under social insurance medical treatment aims at restitution of the useful activity of the body, if its earning capacity is not always covered by simple anatomical healing."[2]

The entire problem of medical aid in all branches of social insurance (accident compensation as well as sickness and invalidity insurance), has been summed up by Dr. Klein in his report to the International Conference on Social Insurance at Dresden, September, 1911, in a series of theses, which, briefly stated (and disregarding those dealing with special German conditions), are as follows:

1. Medical treatment, next to prevention of injury, is the most important feature of social insurance. Compensation is only of secondary importance.

2. Under social insurance medical treatment aims at restitution of the earning capacity, which is not always covered by mere anatomical healing.

3. For successful treatment the co-operation of the injured, the physician, and the insurance carriers is necessary.

4. In their own interest the insurance carriers must place the object of the best possible mode of treatment above the considerations of economy and limitation in time.

5. The earlier and more efficiently medical treatment is undertaken, the better results does it promise. Physicians must be selected with care, and specialists employed whenever necessary. Modern methods of diagnosis must be utilized, and institutional care provided.

[1] See address by Dr. Klein, president of the Senate of the German Imperial Insurance Office, at the second session of the International Conference on Social Insurance, at Dresden, September 6, 1911; *Bulletin des Assurances Sociales*, No. 2, 1912 Supplement, p. 70.

[2] Second International Conference of Social Insurance, at Dresden (September, 1911), p. 70.

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6. Instruction of the insured [workers] in hygiene, through lectures and distribution of literature, is very important.

7. The extension of the accident-insurance system to occupational diseases (provided for in the New German Workmen's Insurance Code of 1911) is to be welcomed.[1]

The principle announced in the third of these theses—that co-operation of the injured is necessary—is not one which might be self-explanatory. Our entire compensation legislation is treated as an obligation of the employer to the injured employee. If the social character of this legislation is recognized, if the restitution of the earning capacity and the prevention of destitution and pauperism be recognized for what it is, as a social rather than individual need, then it inevitably follows that compensation places certain obligations upon the beneficiary as well. This chief obligation is to co-operate in all efforts toward the earliest possible restitution of the social loss sustained, and his first duty therefore is to seek and to accept all necessary medical and surgical aid, unless it be that his life is jeopardized thereby.

As yet, however, very few compensation acts recognize this obligation. In most acts the possibility of the injured person's neglecting, avoiding, or even positively rejecting medical aid is not even contemplated. Of those that do, most seem to be concerned only in protecting the employer against subsequent charges for such medical aid. The acts of Connecticut, Illinois, Louisiana, Montana, New Jersey, and Pennsylvania provide that, if the injured employee refuses medical aid offered by the employer, the employer shall not be liable for its cost. As to whether the injured person is going to receive efficient medical aid in some other way, the acts show not the slightest concern. As far as we were able to discover, only three acts place the obligation of receiving medical aid upon the injured.

The Nebraska act provides that "where the injured employee refuses or neglects to avail himself of such medical or surgical treatment, the employer shall not be liable for any aggravation of such injury to such neglect or refusal" (sec. 20).

[1] *Conférence Internationale des Assurances Sociales*, Dresden, September 15–16, 1911, pp. 81–85.

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The Indiana act goes even farther and specifically commands that (sec. 25) "The employer shall furnish, and the employee shall accept . . . . an attending physician during the 30 days after an injury . . . . and during the whole or any part of the remainder of the disability . . . . the employer *may* continue to furnish . . . . and the employee *shall* accept the physician" (italics are ours). It is furthermore provided that "the refusal of the employee to accept such service when provided by the employer shall bar said employee from further compensation until such refusal ceases, and no compensation shall at any time be payable for the period of suspension," unless the Industrial Board orders otherwise.

No provision seems to be made for the possibility that the employer's physician may be utterly incompetent, and his advice refused on such ground.

The Illinois act goes farther in extending the obligation beyond the aid furnished by the employer's physician: "If any employee shall persist in unsanitary or injurious practices which tend either to imperil or retard his recovery, or shall refuse to submit to such medical or surgical treatment as is reasonably essential to promote his recovery, the Board may, in its discretion, reduce or suspend the compensation of any such injured employee" (sec. 19, Paragraph D).

In its first report, after only one year's experience, the Massachusetts Industrial Accident Board felt itself constrained to ask the legislature for similar authority,[1] but this was not granted, probably out of fear of antagonizing organized labor. Similar action has been taken, however, by several of the industrial accident boards and commissions.

In Connecticut an injured employee was advised to go to a physician, but refused. Subsequently the wound became infected; compensation was disallowed (*Fred. Pierson* v. *Sterling Piano Co. and Aetna Life Insurance Co.*, Conn., July 7, 1914).

In a case before the Wisconsin Commission the injured employee refused to go to a hospital as directed, but applied home treatment. A disability of over four weeks resulted. Physicians claimed that with proper medical aid the disability would not have lasted over two weeks. An opinion like this is difficult to prove, but the

[1] *First Annual Report of the Massachusetts Industrial Accident Board*, p. 46.

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Commission refused to pay compensation beyond the two weeks (Wisconsin—*Fritz Voege* v. *Raulf Co.*, Wis., August 15, 1913).

Similar supra-legal action was also forced upon the United States government in its administration of the earliest American compensation act—the law of May 30, 1908, applying to the employees of the United States government. The serious results following neglect to obtain medical aid after the injury were so evident that (although the act made no provision for medical aid whatsoever) the writer, connected with the administration of that act during the first three years, urged and succeeded in having adopted an official regulation to that effect, reading as follows: "It shall be the duty of each injured employee intending to take advantage of the act, to obtain necessary medical and surgical treatment and to comply with all reasonable orders for treatment and conduct which the attending physician may give."[1]

There was grave doubt at the time in the mind of the solicitor of the Department of Commerce and Labor, whether, in absence of any legal sanction, this rule had any binding force. No penalty for non-compliance was provided.

Of the various "standards" published in this country, only those of Mr. M. W. Alexander emphasize this obligation to accept as well as to give medical aid. Mr. Alexander's standards are practically those of the Indiana act, which he is understood to have helped to shape.[2]

The tendency is undoubtedly a salutary one, but its effectiveness is slight unless it is backed up by a thorough organization which will guarantee the necessary medical aid of highest quality.

These conditions may appear to many hypercritical, fanciful, and wholly unnecessary. The anxiety of the injured employee and his nearest of kin is sufficient, it will be said, to provide ready appeal to some physicians. That would be quite true of college professors or statisticians. But workingmen necessarily grow careless of minor injuries; many of them are foreign born, and have an unreasonable fear of the hospitals; others, American born, have

[1] Rule 5. See *Bulletin of United States Bureau of Labor Statistics, No. 155*, p. 322.

[2] See his pamphlet, *What Should be the Principal Provisions of a Workmen's Compensation Act*, February, 1915, Standards 14, 15, and 16.

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acquired a very dangerous confidence in patent nostra; and, finally, the popularity of such fads as "physical culture" naturopathy, starvation cure, osteopathy, mind cure, and Christian Science, in some communities (as, for instance, Boston, or Southern California) cannot be disregarded. If, to quote an illustration from the writer's experience, a faithful Christian Scientist refuses to accept any aid in case of a badly wrenched ankle, and is disabled for months, when one thorough bandage might have prevented any disability, what are the rights and duties of the various parties interested?

To sum up, the entire problem of medical aid to victims of industrial accidents is still awaiting its solution in this country, and this one problem emphasizes how much remains to be done, undone, and done over in our compensation legislation. Sufficient attention and thought has not been given to this matter. A very erroneous sense of economy has placed limitations upon the extent of medical aid which is producing injustice to the injured and harm to society without really saving anything to the employer. Evidence is not lacking of a gradual realization of these facts in the minds of those concerned with the practice of compensation. But the abolition of these limits is not sufficient to produce the desirable social results. It must be followed by careful study, by an educational campaign among employers as well as employees, and above all by an organized social effort to improve and at the same time to cheapen the administration of medical service, and only then will the appalling waste of human energy and well-being through accidental injuries be brought down to the irreducible minimum.

I. M. Rubinow

New York City

SUPPLEMENTARY NOTE

LEGISLATION OF 1917

This study was completed before the legislative work of many states during the spring of the current year added a substantial amount of new legislation and changed many of the existing provisions. It is still impossible to give an accurate and complete

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account of this recent legislation. But the most important results may be briefly summarized as follows:

New acts.—New compensation acts were passed in five states, with the following medical provisions:

	Maximum Period	Maximum Amount
Delaware	14 days	$25
Idaho	Reasonable (no limit)	Reasonable (no limit)
New Mexico	3 weeks	$ 50
South Dakota	4 weeks	$100
Utah	No limit	$200

Increases.—

Iowa: Time limit increased from 2 to 4 weeks.

Texas: Time limit increased from 1 to 2 weeks.

Vermont: Money limit increased from $75 to $100.

Medical benefits introduced where there were none before.—

	Maximum Period	Maximum Amount
Kansas	50 days	$150
Washington	No limit	No limit

(The employer is to pay half the cost of medical attendance which is organized through a separate fund.)

Other changes.—In Texas medical attendance may be extended two additional weeks by permission of the Industrial Accident Board.

In Nevada the permission to the employer to charge his employees $1.00 per month for medical attendance has been modified, so that the charge subject to the same maximum of $1.00 must not exceed one-half the actual cost.

Free choice.—In Massachusetts, Rhode Island, and Washington the injured employee is given the right to choose his own physician.

As can be seen from this brief and incomplete review, the new provisions have (with one exception) followed the old standards and principles. But the constant tendency to extend provisions for medical aid is very significant indeed. It is a frank recognition

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of the shortcomings of the other standards and furnishes additional evidence for thorough reconsideration of the benefit provisions of all our compensation legislation.

The comparatively new tendency is the granting of free choice of physician. The moving power behind this change was not only the preference of the worker for a physician of his own choice, but the agitation within the medical profession for a "fairer deal," a protest against the concentration of surgical work within the hands of a few physicians. What effect this will have either upon the quality of the medical aid or upon the cost of it, it is at present impossible to prophesy. Much depends upon the development of methods of administrative control.

I. M. R.

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NOTES

WASHINGTON NOTES

COMPLETION OF THE NEW LOAN

Completion of the new loan offered at two thousand million dollars by a subscription estimated to aggregate three billion dollars, the number of subscribers being in the neighborhood of four millions, has been the outstanding feature of public finance during the month of June. As is well understood, the proceeds of the loan have been in part anticipated through the placing of about one thousand million dollars of short-term certificates of indebtedness with banks, such certificates to be converted, if their holders desire, into the long-term bonds or, at the request of the holders, paid off out of the proceeds of the bond sale. Not the least significant aspect of the situation has been the fact that some 99 per cent of all of the subscriptions were in relatively small amounts—less than ten thousand dollars, and that, in the allotting of the new bonds to subscribers, the smaller applicants have been preferred, thereby placing these bonds presumably in the hands of the permanent individual investors.

Exactly how far these subscriptions have been effected on the basis of banking credit cannot be positively stated, but to some extent, at least, this has been the case. Prior to the completion of the subscriptions the federal reserve system, in the effort to render the banking resources of the country readily available, had taken a number of steps intended to facilitate rediscount of paper based on bonds, so that there need be no doubt that would-be subscribers could obtain such aid as they might stand in need of. The steps in the development of the Board's policy may be reviewed as follows:

1. Establishment of a rate of 3 per cent per annum for the discount at federal reserve banks of the direct obligations of member banks, secured by Treasury certificates of indebtedness. These certificates were issued at 3 and 3¼ per cent per annum.

2. The establishment of a rate of discount at federal reserve banks of 3½ per cent per annum for customers' notes rediscounted with the indorsement of member banks when such notes had been originally given for the purpose of securing funds for the purchase of bonds.

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3. The general grant of permission to member banks to act as agents of non-member banks in rediscounting the notes of the latter at federal reserve banks in order to obtain funds to facilitate the operations of such non-member banks in government bonds.

4. The establishment of a "one-day rate" of from 2 to 4 per cent for use in financial centers, chiefly in New York, for the purpose of restoring to the market funds temporarily withdrawn through government loan operations.

5. Provision that notes of non-member banks might be discounted at federal reserve banks with the indorsement of a member bank on the same basis as customers' notes (that is, running up to 90 days' maturity) on condition that such notes should be rediscounted only up to July 15, provided that such notes were accompanied by an affidavit that the proceeds thereof had been used for the purchase or carrying of bonds.

6. General assurance to savings banks and trust companies that the Board desired in every way to co-operate with them in avoiding shock or disturbance to existing conditions, and stood ready further to secure reasonable extension of accommodations at federal reserve banks for the purpose of protecting the interests of such savings banks and trust companies in the event of necessity resulting from the withdrawal of deposits in order to purchase or invest in government bonds.

AMENDMENTS TO FEDERAL RESERVE ACT

President Wilson, on June 21, affixed his signature to the bill amending the Federal Reserve act, which has been under consideration in both Houses at intervals practically ever since the beginning of the special session. The measure as now adopted makes essential changes in the Federal Reserve act—probably the two most important being those relating to the status of the federal reserve note and the composition of the reserves held by the federal reserve banks.

The federal reserve note, which is an obligation of the United States secured by an ample reserve of gold and commercial paper, has been accepted as willingly by the public as a national bank note or as any other form of currency, and the public does not discriminate between different forms of United States currency. Federal reserve note circulation has been substituted for gold certificates to the extent of about $300,000,000.

Under the old law this gold was deposited with the federal reserve agents as special collateral or protection for the federal reserve notes issued upon receipt of it. The notes so provided for thereby, in effect, ceased to be obligations of the federal reserve bank by which they were

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issued. Inasmuch, therefore, as the gold did not figure as an asset, the federal reserve banks were unable to show the greater cash reserve strength which might have been evidenced if the law had permitted, as provided in the amendments now adopted, the issuance of federal reserve notes, not only against commercial paper, but also against gold or against a combination of gold and paper at the pleasure of the bank. It is provided, now as always, that every federal reserve note must be covered by at least 100 per cent of commercial paper or gold, or both, and that gold must be held to an amount not less than 40 per cent of all outstanding federal reserve notes, although, under the amendments, this gold may be counted and reported as a part of the bank's note reserve, thus doing a double duty—as "collateral" and as reserve.

The control of gold by federal reserve banks in times of abundance such as at present, it is argued, will decrease the danger of inflation of domestic credits and at the same time will enable the country, when the tide turns, to part with large sums of gold with less inconvenience or shock, thus enabling us more safely and effectively to proceed with the development of our foreign trade and to give the necessary credit facilities for its extension. The United States should be in a position to face conditions which may call for an outflow of gold without any disturbances of our own or to the world's business, and without making necessary drastic changes in our interest or discount rates. The amendments enable the federal reserve banks to withdraw gold from actual circulation while enabling member banks at the same time to release gold which at present is tied up in their own vaults. The note amendments are based upon the theory that all of the individual banks should strengthen the gold holdings of the federal reserve banks. The country's holdings of gold are not used most effectively when they are in the vaults of a large number of banks scattered all over the country, but their greatest use would come from concentrating them to a greater degree in the vaults of the federal reserve banks, where the gold can be effectively protected when not required and effectively used when needed. The member bank does not require gold with which to supply the ordinary demands of its depositors so much as currency.

Probably the most striking feature of the amendments as adopted, however, is found in the fact that, while the percentages of reserves to be held with reserve banks under the new law are equal to the percentages required under the old law plus the amounts that might, at the option of the banks, have been deposited with them, it is now left to the determination of the local bank itself to fix the amount of currency and money

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which it will carry in its own vaults. While of course this would permit a bank to reduce its vault cash to an unreasonably low level, the assumption is that it will not do so on account of the pressure of necessity from its customers. In some parts of the country experience has shown that even the old vault requirements were not sufficient, so that banks habitually kept much more than they were required by law to hold. In other parts of the country, where demand is very slack, it is probable that little cash need be carried by the banks in their vaults.

Among the other features contained in the new act that are of very considerable importance may be mentioned the following:

Amendments of Section 16 to permit non-member banks and trust companies, even though too small to be eligible for membership in the federal reserve banks, to avail themselves of the clearing and collection facilities of the federal reserve banks, provided that they cover at par checks on themselves sent for collection by the federal reserve bank, and provided, further, that they keep a compensating balance with the federal reserve bank in an amount to be determined under rules prescribed by the Federal Reserve Board. This is not intended to operate as an extension of any of the privileges of the federal reserve system to non-member banks at the expense of members, but, on the contrary, the amendment is proposed primarily for the convenience of the public, and incidentally for the benefit of the member banks. It is contemplated that the compensating balances which non-member banks participating in the clearing plan will be required to keep with the federal reserve banks will be sufficiently large to protect member banks and justify federal reserve banks in undertaking the service. Any clearing and collection plan to be effective must be so comprehensive as to include all checks. At present the par lists of the federal reserve banks include the names of banks, checks on which can be collected in any circumstances at a minimum of time and expense, but do not embrace a large number of towns in every state where there are no member banks; and in order to make collection on such points many banks are obliged to maintain accounts in addition to their reserve accounts with the federal reserve banks. A necessary factor in any successful clearing plan is the offset, whereby balances only require settlement instead of the total volume of transactions. As long as the clearing system does not embrace all of the banks, this offset is lost in a corresponding degree and the value of the system diminished in proportion.

Amendment of Section 22—the penal statute—so as to define more clearly the rights and limitations of directors in the matter of accepting

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fees or compensation, other than the ordinary fees paid directors, for legitimate services rendered in the regular course of business, the performance of which service is not incumbent upon them in their capacity as directors.

Amendment of Section 13 to restore the provision which was by error stricken from the act in the amendments of September 7, 1916, thus restoring to national banks, with the approval of the Federal Reserve Board, the right to accept up to 100 per cent of their capital and surplus in transactions involving imports or exports.

Amendment of Section 17 to cancel the provision of the National Bank act which requires national banks to maintain a minimum deposit of government bonds with the Treasurer of the United States. National banks are no longer required to keep outstanding a minimum amount of circulating notes, and a newly organized bank is not obliged to purchase or carry any bonds of the United States; but there are a number of national banks organized before the passage of the Federal Reserve act which have retired their national bank circulation in full, yet they are, under a construction of the old law, required to keep on deposit with the Treasurer of the United States a certain minimum of United States bonds.

TRUST POWERS OF NATIONAL BANKS

On June 11 the federal Supreme Court handed down its decision in the case of *Bank* v. *Fellows*—a suit brought to determine the constitutionality of that provision of the Federal Reserve act which authorizes member banks to exercise the powers of executor, trustee, administrator, and other fiduciary functions. This suit had gone against the federal reserve system in the lower courts (in Michigan), it being there held that the provision of the Federal Reserve act under which these powers were granted was unconstitutional. This view the federal Supreme Court now declines to uphold, and in a positively expressed opinion takes the view that the section referred to is beyond doubt constitutional, and that the banks to which the Federal Reserve Board has granted the powers are therefore authorized to exercise them. The decision is of large banking importance because it indicates the intention of the judicial authorities to support legislation under which the national banks are allowed to occupy, in part, a region which has heretofore been reserved for the trust companies. In many states, as is well known, trust companies have already invaded the commercial banking field, and they will undoubtedly do so more and more as time goes on in other states. The way is thus paved toward a unification of function between the commercial banks and

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trust companies which in time will tend toward a condition in which the different classes of institutions rest upon an identical footing. Entire identity will, of course, probably never be produced, but the decision now rendered will operate to eliminate the discrimination and unfairness that has grown out of the conditions existing in some states whereby trust companies could exercise commercial banking functions, while the commercial banks could not perform trust-company functions. The decision will also probably enable small banks to serve the needs of their various communities much better than at present, since there are many places of limited population or limited resources which cannot support more than one banking institution, and which consequently find themselves with a commercial bank of limited capitalization, but with no facilities for the performance of trust-company functions. From the legal standpoint the decision is interesting in that it shows the continued disposition of the Court to uphold Congress in vesting extensive power in Congress with regard to banking and monetary questions.

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BOOK REVIEWS AND NOTICES

Civilization and Climate. By ELLSWORTH HUNTINGTON. New Haven: Yale University Press, 1915. 8vo, xii+333. $2.50.

As the author states in his preface, this volume is a product of the new science of geography. He might have gone farther, however, and labeled it a product of the most advanced aspect of modern geography, for the book is an attempt to establish climatic laws of control over many important aspects of human life.

For a number of years the author has been among the most prominent contributors to the literature on climatic changes and related topics. Some of the more important of these contributions are represented by "The Pulse of Asia," "Palestine and Its Transformation," and "The Climatic Factor as Illustrated in Arid America." The present volume may be regarded as the culmination of these earlier contributions, which have been spread over the interval from 1905 to date. Its central thesis is that climatic conditions and changes of climate in historic periods have been very important, perhaps the most important of all, factors influencing the development of civilization, as measured by the sum total of man's progress in different parts of the world. It is not quite up to the literary merit of some of the earlier books, probably because the subject offers little chance for the display of the author's gift for descriptive narrative.

The general trend of the discussion is indicated by such chapter headings as "Race or Place," "The White Man in the Tropics," "The Effect of the Seasons," "The Effect of Humidity and Temperature," "Work and Weather," "The Ideal Climate," "The Distribution of Civilization," "The Shifting of Climatic Zones," "The Shifting Centers of Civilization," and "The Climatic Hypothesis of Civilization." In the last-named chapter, which summarizes the author's whole thesis, the main items are the contention that a particular kind of climate is necessary for the development of a high type of civilization, and that the present distribution of civilization over the surface of the earth coincides with the distribution of climatic conditions which give rise to much energy.

While the author admits that there may be various objections to these major contentions, he nevertheless seems thoroughly convinced

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that supporting evidence is sufficiently abundant and strong to justify accepting the points as the basis of a working theory. The stoutest objector, however, must agree that there are, in the dozen chapters preceding the final conclusions, a great many facts which suggest the deductions which the author has made, and that the material gathered from so widely scattered sources and marshaled effectively lends rather more than an air of plausibility to his statements. On the other hand, it is difficult to follow the author in some instances, both through his discussion of data and to the conclusions which he draws from them. Moreover, in the drawing of graphs, to present conveniently a large body of statistical data of different sorts, a process of smoothing the curves has been followed in a good many cases; by this process various details are removed, and, if carried far enough, it would produce straight lines. Although this method can be defended, there are some places where the coincidence of curves apparently would be slight if the details of variation were left in, but from the coincidence of smooth curves important conclusions are drawn. That is to say, the process of smoothing may well appeal to the reader as the means by which the data are made to fit the theory, and may leave him, not only uncertain about accepting the conclusions without qualification, but also regretting that the data were not presented with all their minor variations in order that he then could form for himself some notion as to the kind and degree of tentative qualification necessary.

In the main the book is sure to prove suggestive and interesting, whether the reader agrees with it or not. For most readers, probably, the chief interest will center on the discussion in chapters viii, ix, and x, wherein the distribution of civilization, vitality, and education in the United States, and the world-conditions of civilization, are reduced to charts, with relative degrees of desirability, of advancement, and of development indicated by appropriate symbols. This part of the work, it is interesting to note, represents, not simply the author's notions as to how various parts of the world compare in the scale of development of human ability, but a combination of results from his own study and opinions from many other investigators—geographers, historians, economists, and so on, scattered the world over—whose assistance was enlisted in an attempt to group and to grade important world-regions with respect to their human development. Thus one finds (p. 180, Fig. 31) the distribution of civilization indicated as of five orders: very high, high, medium, low, and very low. Accompanying it (Fig. 30) is the distribution of human energy as determined by climatic conditions, with

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the same five degrees of differentiation. From these charts the conclusion is to be drawn that human energy, dependent on climate, is a large, if not the determining, factor in the distribution of civilization. Similar charts are presented for the distribution of literacy in the United States.

Such items of course are of much interest, not only to the geographer, but also to those who are working in historical and social sciences; for if Huntington's contentions are to be adopted without qualification, it is obvious that they have a very great bearing on the study of history, and more than that perhaps on the present-day social and economic problems of all parts of the world. To take a specific instance: if Huntington is right, it now becomes more or less practicable to specify the conditions of climate under which a given set of operations, like manufacturing processes, will be most satisfactorily carried out, and to prejudge, therefore, the relative merits of this or that section of the world for complex industrial progress. For example, the application of Huntington's ideas (chapter on "Work and Weather") would lead to the conclusion that all humid tropical areas are naturally and permanently unsuited for efficient manufacturing enterprises; that education and social conditions in general (chapter on "Vitality and Education in the United States") must permanently be less satisfactory in low latitudes than in intermediate zones. In short, by further development of the theory it would be possible definitely to set a relative value on almost every part of the world, so far as the climate of the area would determine the possibility of human advancement. Obviously, therefore, it is a book which every geographer, historian, economist, or any other interested in human progress should read.

The scientific world unquestionably is indebted to the author for the amount of material which he has gathered and presented in usable form and for the effective fashion in which he has summarized the present status of our knowledge concerning the dependence of man on the climatic elements in his environment. Probably most of his readers, after they finish the volume, will feel that a great many qualifications must be added to the main conclusions and that the problem of proving the "climatic hypothesis of civilization" is extremely difficult, involving very elaborate studies of different human groups prosecuted over long intervals of time. For that reason the conservative position at present is to regard the theory as a very interesting one, which may sometime be satisfactorily substantiated, but which is not now in a form to receive general acceptance.

WALTER S. TOWER

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Business Competition and the Law. By GILBERT H. MONTAGUE. New York: Putnam. Pp. vii+318. $1.75.

The law of business competition is a relatively new legal subject. Though the Sherman act of 1890 dealt broadly with competitive relations, it remained for the anti-trust laws of 1914 specifically to declare unlawful "unfair methods of competition in commerce." This legislative provision merely established a standard, and there naturally has been much uncertainty as to what methods of competition are "fair" and what are "unfair." Business men, it is claimed, are eager to obey the law, but the legislative standard is too vague to serve as a safe guide in the conduct of practical affairs. Moreover, the meaning of the provisions in the Clayton act forbidding the price discrimination and "tying contracts" is not clear. This state of affairs induced the author, who as a lawyer has threshed these questions out in numerous cases, to write a book for business men—a book which would give them some idea of the nature of the readjustments in their business which the anti-trust laws made necessary. As the book was written for business men rather than for scholars, and as it was avowedly written in moments snatched from professional duties, the author asks that it be judged by that standard, and that readers excuse the many evidences of haste in preparation.

The author urges business men not to treat the anti-trust laws lightly. There is danger in adopting aggressive methods of dealing with competitors, and there is an equal danger in too harmonious relations with competitors. The prices of competitors' goods may be met and new brands may be introduced to parallel competing brands, but the emphasis must be placed on selling one's own goods, and not on preventing the sale by others of their goods. Above all, the business man must avoid any appearance of unlawful intent. The attitude of the government seems to be that "safety lies in minding your own business; and the man who begins to mind his competitor's business is inviting trouble." Great care should also be exercised in writing letters, particularly when they establish policies, for the government may get hold of them and make use of them in court proceedings. Again, exclusive dealer agreements, a pet abomination of the government, should be entered into with the greatest circumspection. The same is true of "tying contracts," which are much more common than is generally realized. A contract whereby a manufacturer of incandescent lamps agrees to supply a factory for a year with all the lamps it needs is illegal, unless this contract does not "substantially lessen competition." Even an exclusive contract to manufacture letter-boxes for Uncle Sam may be

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illegal, in spite of the fact that the government is a party to the contract. Neither do patents provide a complete protection. The possession of a patent is no justification for acts which are not provided for in the patent law and which are not necessary for the protection of the patent. Even the infringement of a lawful patent does not justify a resort to unfair methods of competition. And as for trade associations, they are, generally speaking, to be avoided. Trade associations to fix prices, to pool profits, or to divide territory in respect to unpatented articles at least, are held to be as dangerous as larceny. So alert are the government and the courts that trade associations of these types are urged to give the anti-trust laws the benefit of the doubt.

While the author seems to have great respect for the energy of the Department of Justice in prosecuting the anti-trust laws, he is not in sympathy with its work. "The Attorney-General's men," he says, "not only are adepts at stripping off disguises, but are exasperatingly suspicious and cynical in their view of some very common methods of conpetition." The Department is accused of exercising great ingenuity in placing a sinister "interpretation" on all exclusive dealer agreements. Again, "any association activity resembling boycotting or black-listing immediately arouses . . . . the prying curiosity of the United States Attorney." Such statements betoken an ill-concealed impatience with the anti-trust laws and the government's manner of enforcement. The reviewer, on the other hand, welcomes the adoption of a governmental code of salesmanship, and finds his respect for the Department of Justice and its activity increased rather than decreased by the reading of this book.

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The Social Survey. By CAROL ARONOVICI. Philadelphia: Harper Press, 1916. Pp. ix+255.

Community Action through Surveys. By SHELBY M. HARRISON. New York: Russel Sage Foundation, Department of Surveys and Exhibits, 1916. Pp. 29. $0.10.

There is a steadily widening demand for the plain facts about the problems of our practical daily life. The muckraker has gone out of fashion; the social surveyor is his successor. The interest in social problems which the stimulating descriptions of the popular writers created has been inherited by the social investigator. All over the

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country little groups of people who a few years ago met together to cultivate a taste for literature and art are now studying their local communities and devising plans to reform them. This is the survey movement.

These people want direction in their studies. Some years ago Carol Aronovici wrote a little pamphlet to meet this need. It was entitled *Knowing One's Own Community* and was published and circulated by the Unitarian Society of Boston. The present volume is an expansion of that pamphlet. In some particulars it is an improvement. It contains a general bibliography, some excellent illustrations, and a chapter on housing, all of which are very real additions to the earlier volume. In order to give more body to the book, however, the author has diluted its very practical suggestions with a washy social philosophy which rather detracts from the general excellence of the earlier pamphlet. It is not a handbook for social surveyors, but it is a first-rate introduction for the average citizen to the problems of his community.

The social survey, according to the angle from which you approach it, presents itself as a method of investigation, a social movement, or a means of social reform. Aronovici, in his volume, *The Social Survey*, puts the emphasis, in the main, upon investigation. In Shelby M. Harrison's little pamphlet, *Community Action through Surveys*, the emphasis is on action. The survey, as he understands it, is a method of social control, of government. It is a part of the new democracy in which participation of the people and efficient government are reconciled. In contrast with the political action through the medium of party conflict it proposes that social reform, while emanating from the people, shall be based on fact rather than doctrine and be carried into effect by the community, in the interest of the community, rather than by a party in the interest of a party. It is the real referendum.

This is the way in which Harrison states the matter:

> To sum up the survey in a few sentences at this point, it is an implement for more intelligent democracy, its chief features or characteristics being: the careful investigation, analysis, and interpretation of the facts of social problems; the recommendation and outlining of action based on the facts, and the acquainting and educating of the community not only to conditions found but to the corrective and preventive measures to be adopted. The survey lays, moreover, emphasis upon the importance of studying problems in their various community-wide relations and urges co-operative action on a community-wide basis. It deals with the whole district and endeavors to lead individuals to think in terms of the whole. It is the application of scientific method to the

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study and solution of social problems, which have specific geographical limits and bearings, plus such a spreading of its facts and recommendations as will make them, as far as possible, the common knowledge of the community, and a force for intelligent co-ordinated action.

This is unquestionably the most accurate statement extant of the motives that have entered into the making of the social survey, which is not primarily a method of investigation, but rather a method of social action. This defines its usefulness and explains its popularity.

ROBERT E. PARK

UNIVERSITY OF CHICAGO

A Financial History of Texas. By EDMUND THORNTON MILLER. (Bulletin of the University of Texas, 1916, No. 37.) Austin, Texas. 8vo paper, pp. viii+444. $1.00.

This book, the first financial history of the state of Texas to appear since 1852, when William Gouge published his *Fiscal History of Texas*, supplies practically all of the facts relevant to the fiscal operations of the state of Texas from the date of the earliest white settler to the present time. Being largely a mass of statistical detail, it interests the casual reader not so much as it does the careful student of public finance, and more particularly those who are interested in the past history of this commonwealth. The writer has followed a well-organized plan covering expenditures, receipts, the public debt, and the various special taxes used to derive revenue in each of the following epochs: Part I, "The Spanish-Mexican Period"; Part II, "The Republic, 1836–1846"; Part III, "The State, 1846–1861"; Part IV, "The Civil War, 1861–1865"; Part V, "The Reconstruction, 1865–1874"; Part VI, "The Period of Recovery, 1874–1880"; and Part VII, "The Period 1881–1915."

Owing to the fact of the extended period of frontier life, the Revolution, the Indian wars, the Civil War, and the prostration and anarchy that existed throughout the Reconstruction, the greater part of the state's expenditures during the first three quarters of the nineteenth century were devoted to maintaining the existing order, and it was not until the latter date that the Wagnerian law of public expenditures began to operate. Since 1881 the outlay has increased intensively and extensively. Both the state and local governments have undertaken new functions, at the same time performing old and new functions more efficiently and completely. As evidence of this fact, it is pointed out that from 1881 to 1915 the total annual expenditures increased 609 per cent, whereas those on account of education, charities, and corrections increased 1,317 per cent.

Property was laid down as the test of taxable capacity as early as 1821 and has been retained up to the present, although supplemented at various times

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by other forms, such as the corporation, general occupation, license, inheritance taxes, etc. As in many other commonwealths, the present system rests heavily on real estate, while intangible personal property escapes with light assessments, owing to the worn-out state constitutional provisions relating to taxation laid down at a time when the corporation was not so great a factor as now, the urban population was small, and the conditions for the operation of the general property tax were more favorable.

Texas is in the rearguard of the American states as respects its methods of taxation, with its strict adherence to the general property tax, its uniform rate upon all classes of property, and its decentralized system of administration. The worst feature apparently is the utter lack of correlation of the system as a whole. For example, railroad properties throughout the state are assessed for the most part in piecemeal by local assessors, and there is no state supervision by a central body in the fixing of assessments of the property of either individuals or corporations, a most "incomprehensible" state of affairs.

Various proposals have been made in and out of the legislature to remove these evils. The writer (p. 387), in commenting on desirable reforms says:

> If the property tax is retained as a state tax, some system of state control over assessments should be adopted. Decentralization of administration has failed in the administration of the public lands. Centralization should succeed decentralization, and the state board or commission should have the power to supervise assessments of property for state taxation, should have authority over assessors and collectors, and should assess the property of corporations which, like railroads, express companies, telegraph and telephone companies, do a state-wide business. The present state tax board is deficient in power and is wrongly constituted.

The adoption of a budget system and the amending of the constitution so as to allow a larger public debt, now limited to $200,000, are among other measures proposed. The unusually low allotment for the state indebtedness reflects, the stringency which existed at the time the constitution was adopted in 1875, and the mutual distrust which existed between the legislative and executive branches of the government. The amount is far below the present requirements of the state and should be raised.

The reviewer feels that greater space should be given to the practical suggestions made in the conclusion. In view of their importance, it seems that much of the value of the work is lost because they are not discussed more fully. A very useful part of the history consists of the chapters introducing each epoch. These chapters sketch the economic and social characteristics of the epoch and at the same time serve as an index to the financial data which follows. The writer, in advocating income instead of property as a measure of ability to pay taxes, an income tax which distinguishes between income property and personal exertion in the rate, special assessments for improvements, and a moderate land increment tax, shows himself to be fully abreast of modern tendencies in tax reform movement.

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Some Legal Phases of Corporate Financing, Reorganization and Regulation. By FRANCIS LYNDE STETSON, JAMES BYRNE, PAUL D. CRAVATH, GEORGE W. WICKERSHAM, GILBERT H. MONTAGUE, GEORGE S. COLEMAN, WILLIAM D. GUTHRIE. New York: Macmillan, 1917. 8vo, pp. ix+389. $2.75.

This work comprises a series of addresses by eminent lawyers delivered at the instance of the Association of the Bar of the city of New York. Although stated to be designed primarily for the practical guidance of practicing lawyers, they will be of interest and value to students of corporation problems, the trust problem, and public utilities.

The first three addresses deal with corporation problems. The address on the preparation of corporate bonds, mortgages, collateral trusts, and debentures is an excellent statement of some of the legal problems involved in financing by means of bond issues. It contains a short but highly interesting account of the modern bond and mortgage. The addresses on the foreclosure of corporate mortgages and the reorganization of corporations throw light on the legal problems involved in reorganizations under the American law. The latter address is more than a mere legal discussion; it is a description of the actual process of reorganization and of many of the practical problems involved.

There are two addresses on the trust problem—one on the Sherman act and the other on the Clayton and Trade Commission acts. The former is a clear exposition of some of the main features of the law as interpreted by the courts, but it includes no criticism and little analysis of unsettled problems. The address on the Clayton and Trade Commission acts is also mainly descriptive rather than analytical. Its most interesting feature is its analysis of section 5 of the Clayton act, a section designed to facilitate private damage suits under the anti-trust laws. The analysis tends to show that the section fails to accomplish its purpose.

Of the two addresses on public utilities, the first deals only with the New York law and commissions. The second is a general criticism of commissions as they exist, on the ground that commissioners are unqualified to handle the problems with which they deal, that commissions have more than they can properly do, and that, being administrative as well as judicial bodies, commissions are unable to give a fair and impartial hearing. The author favors divorcing commissions from their administrative activities, the appointment of technical experts as commissioners, and, strange to say in view of the second proposal, giving the courts full power to review questions of fact. This thought-provoking paper is marred by a very evident hostility toward commissions. One also feels that much more is involved in the questions of whether commissioners must be technical experts and whether commissions should be administrative as well as judicial bodies than the author indicates.

Of these addresses, the three on corporation problems are by far the most interesting to the economist. With the exception of the last address on public utilities, the other addresses tend to be mainly descriptive, with little analysis.

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The Land Credit Problem. By GEORGE E. PUTNAM. (Bulletin of the University of Kansas, XVII, No. 18.) Lawrence, 1916. 8vo, pp. 107. $0.75.

This work deals with one phase of the rural-credit problem—the provision of long-term land mortgage credit. The problem splits up into two principal parts, which, as the author points out, call for different treatment and which must be clearly distinguished in order to avoid unsound policies: (1) The provision of land credit for landowners and (2) the provision of land credit for those seeking to become landowners. With reference to each of these problems the author discusses the present situation and need for reform in the United States, the methods used by foreign countries, the attempts, actual and proposed, to deal with the problem in the United States. Finally, he offers general suggestions toward the solution of each problem.

The author believes that the land-credit needs of landowners can be adequately supplied by institutions conducted for profit. The fundamental defect of the present system lies in the character of the institutions on which the farmer is dependent, the lack of specialists in the business of negotiating farm mortgage loans, which is largely due to distrust of farm mortgage bonds and farm mortgage companies following the collapse of the farm mortgage boom. Evidences of renewed confidence in land mortgage bonds are not lacking, and, admitting the prejudice against debenture bonds, the author believes that the bonds of well-regulated farm land banks may attain the standing of collateral trust bonds (which they more nearly resemble than railroad debentures), once the public has become accustomed to debenture securities.

In discussing proposed solutions of the farm tenancy problem the author points out the fallacy in the popular belief that a material reduction in the rate of interest to *all* farmers would enable farm tenants to become their own masters. The effect of lower rates would be to promote the spirit of land speculation, to raise the value of land, and only to further the movement toward concentration in ownership. Efforts to reduce farm tenancy by reducing the borrower's rate of interest must limit the borrowing power of present landowners at the privileged rates and should require that the land acquired be cultivated by the owner as resident for a definite period of years.

The work is a very concise, penetrating, and judicial analysis of a problem which has been the subject of much prejudice and ill-digested thinking. The excellent discussion of the Federal Farm Loan act is virtually the counterpart of the author's article in the *American Economic Review* for December, 1916.

Valuation, Depreciation and the Rate-Base. By CARL E. GRUNSKY and CARL E. GRUNSKY, JR. New York: John Wiley & Sons, Inc., 1917. 8vo, pp. viii+387. $4.00.

This work on the valuation of utilities and mines contains little new material for most students of the subject. It is primarily an exposition of established

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practices in valuation without much critical appraisal of their soundness. Students beginning the study of valuation, however, will find the work a clear and helpful presentation of the subject.

The work is not well balanced in its emphasis. By far the most satisfactory part is the discussion of depreciation. The tables showing the manner in which the sinking fund, equal payments, straight line, and unlimited life methods work out when applied in different manners should greatly aid the new student in understanding the differences between the methods. On the other hand, the discussion of the legal basis for regulation is so brief as to be of slight value. The important subjects of the valuation of land and water rights are discussed in a very general way. On the question of the right of utilities to share in the general prosperity of the community the authors hold that the utilities are entitled to share even under regulation, but believe that this should be accomplished by raising the rate of return rather than by allowing a value greater than the amount invested in the business. The authors do not attempt to justify their position that utilities are entitled to a return above that necessary to induce the investment of capital, nor do they discuss how the share to which utilities are entitled in the general prosperity is to be ascertained.

The book contains extensive and conveniently arranged tables on the probable useful life of various articles (with authorities), expectancy and remaining value according to probable life, present value of $1.00 at future dates, and compound interest, annuity, amortization, and depreciation tables. The chapter on the valuation of mines and oil properties contains an interesting summary of the methods of valuing these properties by various states for taxation.

Rural Land Ownership among the Negroes of Virginia. By SAMUEL BITTING. (Publications of the University of Virginia—Phelps-Stokes Fellowship Papers.) Charlottesville, Va.: The Michie Co., 1915. 8vo, pp. 110.

This monograph is a report of an investigation carried on by Mr. Bitting during his incumbency of the Phelps-Stokes Fellowship at the University of Virginia during the session of 1914–15. The work, which takes the form of a survey, treats of the social and economic conditions among the negro population in selected rural districts in the state of Virginia, and attempts to show the relationship between land ownership and moral responsibility and regeneration. Throughout the work a contrast is made between the conditions of welfare in rural districts and corresponding city conditions. Agriculture is virtually the only occupation wherein the negro will finally succeed, concludes the writer, after reviewing the facts of the unequal competition with the whites in the trades and the influx of immigrants from Southern Europe into the South.

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That part of the problem which is biologic will find solution in the proper adjustment between environment and racial inheritance, whereas the purely social aspect consists in developing the qualities which will make the negro responsible to himself and society. But the most important part of the problem is economic. Here, as elsewhere, the problem of economic independence lies at the very heart of the problem of welfare; all other social adjustments follow as its result. In the last analysis it resolves itself into maintaining by increased efficiency the advantage which the negro now enjoys in the rural districts. In greater ownership of land lies the most important element of the solution.

The work on the whole is well done, although it lacks organic unity in places and would be improved by a rearrangement which would avoid the duplications found in chaps. i and ii. Much of the statistical material found in chap. i could be placed in chap. iii where present conditions are treated.

Property and Society. By HON. ANDREW ALEXANDER BRUCE. (National Social Science Series.) Chicago: A. C. McClurg & Co., 1916. 12mo, pp. 150. $0.50.

This work is an elementary exposition of the nature and significance of private property. It discusses the legal and social concept of property, the origin of private property, the necessity for private property, and particularly the limitations imposed on private property rights by the interests of the public and of other property-owners. This last theme, which is the main topic in the book, is developed in a series of chapters on private property and personal liberty, the right of the state to prevent waste, employers' liability acts, the right of combination, the right to bequeath and inherit, and anarchism and socialism.

The book is characterized by a marked social and historical point of view. Property is presented, not as a bundle of technical legal rights, but as a social institution which has been different in different periods and under different social systems and which has been changed to fit into the conditions of the time and place. The absence of a formal legalistic point of view is particularly noteworthy in view of the author's position in the legal world.

The least satisfactory part of the book is the discussion of the origin of property. The author gives no exposition of the various theories of the origin of private ownership (except a slight reference to Veblen's) and his own theory or statement is decidedly vague.

The author tends to be dogmatic on economic matters. He decides with practically no discussion that monopolies should be regulated rather than dissolved. In discussing inheritance taxes he says (p. 121): "It is really immaterial to society as a whole who owns property as long as it is beneficially used."

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One Hundred Years of Savings Banking. Including Bibliography on Thrift. By EDWARD L. ROBINSON. New York: Savings Bank Section, American Bankers' Association, 1917. 12mo, pp. 89.

This little volume, comprising twenty-nine pages of text and sixty pages of bibliography, has been prepared under the direction of the Savings Bank Section of the American Bankers' Association. The text is written by Mr. Edward L. Robinson, vice-president of a savings bank in Baltimore, and the bibliography prepared by Marian A. Glenn, librarian of the American Bankers' Association. The volume is chiefly valuable for the extensive bibliography, which is *selective* in the main but *collective* for the subjects closely related to the bankers' thrift campaign and the centennial of American savings banks. The bibliography covers, not only thrift in its *negative* aspects of saving, but also in its *positive* aspects of co-operation and efficient management.

The topics covered by the bibliography are as follows: "Thrift and Savings," "Individual Thrift," "Domestic Thrift," "Evidences of Thriftlessness," "Economics of Thrift," "Industrial Thrift," "Business Thrift," "Banking Thrift," "National Thrift," "International Thrift," "Thrift Agencies," "Nation-Wide Thrift Movement Inaugurated to Celebrate Centennial Anniversary of Savings Banks in America."

Co-operative Credit for the United States. By HENRY W. WOLFF. New York: Sturgis & Walton, 1917. 12mo, pp. vi+349. $1.50

This is a welcome volume by the well-known author of *People's Banks.* The purpose of the book is to rewrite *People's Banks* and other works in a manner suited to the ideas and habits of American readers, and also to elucidate the principles of co-operative credit and to show how they may be adapted to the peculiarities of American life. The conclusion is distinctly optimistic as to the future of co-operative credit in the United States.

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The Legality of the Combination of Competitors under the Sherman Act *Sumner H. Slichter* 761

Some Advantages of the Logarithmic Scale in Statistical Diagrams *James A. Field* 805

Notes 842

Washington Notes: 842
The Completion of the "Liberty Loan"—Growth of War Expenditures—"Trading with the Enemy"—Legislative Control of Food—Investment Effects of the War—Reserve Banks and the War.

The Causes of Unemployment: A Communication *H. Stanley Jevons* 850

Book Reviews and Notices 851

LAUCK AND SYDENSTRICKER'S *Conditions of Labor in American Industries* (Nathan Fine), 851.—JACKMAN'S *The Development of Transportation in Modern England* (Clive Day), 853.—NEWCOMER'S *Separation of State and Local Revenues in the United States*, 854.—WILLOUGHBY, WILLOUGHBY, AND LINDSAY'S *The Financial Administration of Great Britain*; STOURM'S *The Budget*, 855.—BENNETT'S *Women and Work. The Economic Value of College Training*, 856.

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THE LEGALITY OF THE COMBINATION OF COMPETITORS UNDER THE SHERMAN ACT[1]

The question to what extent combination of competitors is permissible under the Sherman act is probably the most important unsettled question in the interpretation of the act. To the four other questions of prime importance relating to the scope of the act—viz., (1) Are corners illegal? (2) Are combinations for the purpose of boycotting illegal? (3) Are contracts for the maintenance of resale prices illegal? and (4) What restrictions does the act impose upon competitive methods—we either have fairly definite answers in so far as the fundamental principles are concerned, or the questions have been rendered academic by the Trade Commission act or by the Clayton act. *United States* v. *Patten*[2] holds that running a corner is contrary to the Sherman act. *Loewe* v. *Lawlor*[3] and *Eastern Retail Lumber Dealers' Association* v. *United*

[1] Because the statement of Mr. Justice Holmes in his dissent in the Northern Securities case (193 U.S. 197 at 403)—that the word "monopolize" in the second section of the Sherman act is synonymous with "restraint of trade" in the first section and that the second section is intended to apply to individuals the prohibitions which the first section applies to combinations—appears to be accepted by the court (*Standard Oil Co.* v. *United States*, 221 U.S. 1 at p. 61), for the sake of convenience the phrase "restaint of trade" alone will be used in the following discussion in referring to the objects of the prohibitions of the act.

[2] 225 U.S. 325. [3] 208 U.S. 274.

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States[1] establish that combinations for the purpose of boycotting violate the statute. *Dr. Miles Medical Co.* v. *John D. Parke & Sons Co.*[2] holds that a contract for the maintenance of resale prices violates the statute, even though the contract is between a single manufacturer and his dealers. The status of unfair competitive methods is less definitely settled because it has not been decided what methods are unfair and under what circumstances they are unfair. The principle seems to be definitely established, however, that the injury of a competitor's business by the use of unfair competitive methods is an undue restraint of trade.[3] The Trade Commission act definitely declares all unfair methods of competition to be illegal. As to what are unfair competitive methods, several of the most common and most important unfair practices—local price-cutting, use of bogus independents and "fighting brands" for the purpose of destroying competition, and tying contracts (when not reasonably necessary for the efficient and economical marketing of the commodity)—have been held unfair, at least when practiced by large and powerful combinations.[4] The Clayton act has a prohibition of doubtful value against price discrimination and an apparently effective one against "tying" contracts.[5]

[1] 234 U.S. 60. The question whether boycotting is a restraint of trade was under consideration also in *Grenada* v. *Mississippi*, 217 U.S. 600. The court held it to be a restraint of trade and a Mississippi statute prohibiting it as a restraint of trade to be a legitimate exercise of the police power in protection of the freedom of trade.

[2] 220 U.S. 373.

[3] In the Standard Oil case (221 U.S. 58) the court held that the act prohibited all agreements or acts which "had not been entered into, or performed with, the legitimate purpose of reasonably forwarding personal interest and developing trade," but "with the intent to do wrong to the general public and to limit the right of individuals."

[4] The leading cases on local price-cutting are *United States* v. *American Tobacco Co.*, 221 U.S. 106; *United States* v. *E.I. Dupont de Nemours & Co.*, 188 Fed. 127 (see also dissolution decree reprinted in Stevens, *Industrial Combinations and Trusts*, p. 469); *United States* v. *Great Lakes Towing Co.*, 208 Fed. 733; 217 Fed. 656; *United States* v. *Hamburgh-American S.S. Line*, 216 Fed. 971; *United States* v. *Eastman Kodak Co.*, 226 Fed. 62. The leading cases on tying contracts are *United States* v. *American Tobacco Co.*, 221 U.S. 106; *Standard Sanitary Manufacturing Co.* v. *United States*, 226 U.S. 20; *United States* v. *Pacific and Arctic Co.*, 228 U.S. 87; *United States* v. *Great Lakes Towing Co.*, 208 Fed. 733; 217 Fed. 656; *United States* v. *Keystone Watch Case Co.*, 218 Fed. 502; *United States* v. *Eastman Kodak Co.*, 226 Fed. 62.

[5] Unless the courts shall hold the clause in section 2 of the Clayton act permitting discrimination in price on account of differences in grade, quality, or quantity to mean only "reasonable" discrimination, this section appears to be a "joker."

Section 3 of the Clayton act declares exclusive sales agreements and rebates based on exclusive dealing illegal when their effect is substantially to lessen competition or to tend to create monopoly.

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The legality of the combination of competitors, however, remains in doubt. Numerous combinations have been dissolved under the act, but, with the exception of four cases, in every dissolution which has been passed upon by the Supreme Court there has been either proof or admission by demurrer of acts, such as oppression of competitors or exaction of exorbitant prices from consumers, which in themselves were recognized as restraints of trade.[1] Three cases in which there was no claim or admission of illegal practices—the Trans-Missouri Freight Association case,[2] the Joint-Traffic Association case,[3] and the Northern Securities Co. case[4]—occurred before the announcement of the "rule of reason" in the Standard Oil and Tobacco cases. The court expressly held that the combinations were illegal, regardless of the reasonableness of their actual practices and regardless of whether they were justified in order to prevent cut-throat competition. Two of the combinations—the Trans-Missouri Freight Association and the Joint-Traffic Association—were simply price-fixing organizations in which no unity of ownership and no unity of operation were created. Such combinations are less likely than consolidations to appeal to the courts as being necessary to realize economies of marketing or production. The Northern Securities Company created a unified ownership of the combining enterprises which might have developed into unification of the operating organization. The case, however, was decided by a closely divided court with strong dissenting opinions by the present Chief Justice and Mr. Justice Holmes. This case, moreover, was decided before the combination had been in operation a sufficient period of time to indicate whether

[1] The cases in which combinations of competitors have been dissolved or held illegal under the Sherman act by the Supreme Court, but in which practices illegal in themselves were present, are: *Addyston Pipe and Steel Co.* v. *United States*, 175 U.S. 211 (1899); *Montague* v. *Lowry*, 193 U.S. 38 (1904); *Swift & Co.* v. *United States*, 196 U.S. 375 (1905); *Bobbs Merrill Co.* v. *Straus*, 210 U.S. 339 (1908); *Continental Wall Paper Co.* v. *Voight & Sons Co.*, 212 U.S. 227 (1909); *Standard Oil Co.* v. *United States*, 221 U.S. 1 (1911); *United States* v. *American Tobacco Co.*, 221 U.S. 106 (1911); *Standard Sanitary Manufacturing Co.* v. *United States*, 226 U.S. 20 (1912); *United States* v. *Reading Co.*, 226 U.S. 324 (1912); *Nash* v. *United States*, 229 U.S. 373 (1913); *Straus* v. *American Publishers' Association*, 231 U.S. 222 (1913); *Thomsen* v. *Cayser* (decided March 16, 1917), 61 U.S.L. ed. 353.

[2] *United States* v. *Trans-Missouri Freight Association*, 166 U.S. 290 (1897).

[3] *United States* v. *Joint-Traffic Association*, 171 U.S. 505 (1898).

[4] *Northern Securities Co.* v. *United States*, 193 S. 197 (19U.04).

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its practices would be legal or illegal and does not, therefore, indicate whether a combination is subject to dissolution if during years of existence its practices have proven consistently legal.

The fourth instance of dissolution involving no illegal practices by the combination is the Union Pacific case.[1] This case followed the Standard Oil and Tobacco decisions. The combination was also an actual operating unification rather than a mere price-fixing arrangement. This case, therefore, would appear to express the present law upon the legality of combinations involving actual unification of operating organization which have been guilty of no specifically illegal practices. In a number of subsequent cases, however, the lower courts either have held contrary to the doctrine of the Union Pacific case or, where the point was not involved, have expressed *dicta* contrary to the case. Judge Sanborn's dissent in the Harvester case,[2] the opinion of the court in the Keystone Watch Case Company case,[3] the Hamburgh-American Line[4] and Prince Line cases,[5] the Steel Corporation case,[6] and the Eastman Kodak case[7] all hold that illegal practices or a clear illegal purpose in addition to the mere combination of competitive enterprises are necessary in order to violate the statute.[8]

[1] *United States* v. *Union Pacific R.R.*, 226 U.S. 61 (1912).

[2] 214 Fed. 987 (1914).

[3] 218 Fed. 502 (1915). This case, however, holds that if the question of the legality of the combination is raised shortly after the formation of the combination, before it has had a chance to demonstrate its character by its practices, the combination may be dissolved if there is a reasonable probability of restraint of trade resulting from the combination.

[4] 216 Fed. 671 (1914).

[5] 220 Fed. 230 (1915).

[6] 223 Fed. 55 (1915).

[7] 226 Fed. 62 (1915).

[8] *United States* v. *Great Lakes Towing Co.*, 208 Fed. 733 and 217 Fed. 656, and *United States* v. *American Can Co.*, 230 Fed. 859 and 234 Fed. 1019, have also been interpreted as expressing the view that the mere combination of competitors is not enough to constitute a violation of the statute. This, however, seems a misinterpretation. The cases appear to have been decided upon the point that dissolution of the combination was unnecessary in order to restore competitive conditions. *United States* v. *St. Louis Terminal Railroad Association*, 224 U.S. 383, has also been referred to as authority that "good" trusts are not subject to dissolution despite their control over the market and the elimination of competition which they bring about. This interpretation is also erroneous. The St. Louis Terminal Association was not a good trust, in the sense that its practices had conformed with the law. The reason why it was not dissolved was that because of the peculiar circumstances of the case the association, when properly conducted, tended to *promote*, rather than to hinder, competition between the railroads entering St. Louis. This is radically different from a combination which hinders, rather than promotes, competition.

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Thus the question whether combinations of competitors, in themselves, and regardless of the fact that their practices in no way restrain trade, may ever be in restraint of trade, and, if so, under what circumstances they restrain trade, still appears in doubt. Does the rule of reason penalize only combinations inflicting positive injury upon others, or does it also penalize the mere restriction of competition which results from the combination of competitors, regardless of its actual effect upon trade? If the latter, does the rule of reason distinguish between combinations in the form of mere price-fixing agreements and combinations involving some degree of operating unification and possibly bringing about operating economies? Combinations involving unification of operation may eliminate competition from the market even more effectively than mere price-fixing agreements between enterprises retaining their independence, and probably possess much greater power over the market than would the combination of the same companies by means of a price-fixing agreement. Does the fact that a consolidation of independent enterprises into a single operating organization eliminates competition and creates a power to dominate the market, in precisely the same way as a price-fixing agreement, vitiate the consolidation in all cases where a price-fixing agreement would be illegal, or does the rule of reason recognize that such consolidations are necessary to realize legitimate business purposes and permit them as long as they wield their power legally? What is the test of a "reasonable" combination? Is it the actual or the probable effects of the combination?

Section 7 of the Clayton act, which deals with combinations, renders no aid because it is confined to the prohibition of combination by the acquisition of stock or "other share capital" of one or several companies by another. It can be evaded by the outright purchase of the corporation's property. The constitutionality of the prohibition, in sec. 7, of the acquisition of stock or other share capital by one corporation in another or by a holding company in several companies "where the effect may be to substantially lessen competition" between the corporation making the acquisition and the corporation whose stock is acquired, or, in the case of a purchase by a holding company, between the several corporations whose stock is acquired, is doubtful. Every

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acquisition of a controlling interest by one competing corporation in another or by a holding company in several competing corporations necessarily eliminates competition between the corporations, if the control is exercised. If the corporations are in competition for a substantial proportion of their business, the result would be a "substantial" lessening of competition between the corporations, contrary to the prohibition of the statute. The question is whether this prohibition is so closely related to the prevention of restraint of trade as to bring it within the power of Congress to regulate commerce. Although it is well settled that the prohibition of the acquisition of property may be sufficiently related to the protection of commerce from restraint as to be justified as an exercise of the power to regulate commerce, there is a limit beyond which the prohibition of the acquisition of property ceases to be an appropriate means of preventing unreasonable restraints of trade. This limit would seem to be passed by a prohibition against the acquisition of a controlling interest in any corporation which competed to a "substantial" extent with the acquiring corporation or by a third company in several competitors, regardless of how insignificant was the proportion of the line of business controlled by the competitors.

The provision is also open to the attack that it limits the freedom of contract, contrary to the Fifth Amendment, on the same ground, that the restriction on the freedom to acquire property is greater than is reasonably necessary to protect trade from undue restraints.

Should this provision of the section be held void, the prohibition of the section would be limited to the acquisition of stock by one of two competitors in the other or by a holding company in several competitors where the effect may be "to restrain . . . . commerce in any section or community, or tend to create a monopoly of any line of commerce." This is substantially the same prohibition as the Sherman act contains, and the same principles which apply in the interpretation of the Sherman act would apply in the interpretation of this section.

I

Before discussing the controversy between those who hold that combination *per se* may be a violation of the statute and those who insist that something more is necessary, it may be desirable to clear

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up a possible source of confusion. The question may be raised how the argument that combinations of competitors may not in themselves be a restraint of trade can be reconciled with the fact that such combinations have been dissolved. If it is the acts of the combination rather than the combination itself which are illegal, why is not an injunction against the wrongful acts sufficient? Does not the fact that combinations have been dissolved indicate that there is inherent in combinations something which violates the act?

The dissolutions cannot be explained on the ground that they are a penalty for transgressing the statute, for dissolution is the act of a court of equity. Equity acts to remove existing or to prevent future wrongs but not to inflict penalties for past wrongs.

When an injunction will give effective relief, the rule apparently is that an injunction will be the remedy.[1] There are cases, however, in which an injunction will not furnish effective relief. Such may be the case when the combination controls prices. It is well established that the exaction of extortionate prices by a monopolistic combination is a restraint of trade. The principles which determine what is a fair price are complicated and not worked out. The ascertainment of the facts necessary to determine what is a fair price is an equally formidable task. The courts are unequipped,

[1] *United States* v. *St. Louis Terminal Railroad Association* (224 U.S. 383). In this case a terminal railroad association was found guilty of discriminatory practices in restraint of trade. The court found, however, that the illegal practices could be prevented without dissolving the combination and held that the decree should be confined to the prohibition of the offending practices. The court said: "If, as we have pointed out, the violation of the statute, in view of the inherent physical conditions, grows out of administrative conditions which may be eliminated and the obvious advantages of unification preserved, such a modification of the agreement between the Terminal Co. and the proprietory companies as shall constitute the former the bona fide agent and servant of every railroad line which shall use its facilities, and an inhibition of certain methods of administration to which we have referred, will amply indicate the wise purpose of the statute and will preserve to the public a system of great public advantage."

In *United States* v. *Great Lakes Towing Co.*, 208 Fed. 733 and 217 Fed. 656, a combination of towing companies controlling 90 per cent of the business in fourteen lake ports was found guilty of violating the anti-trust act. The court held that, since without certain practices in conducting the business there would have been no violation of the act and since the illegal practices would be adequately prevented by an injunction, an injunction was all the relief that would be given.

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both by training and by experience, to deal with each of these problems. Even should the court surmount these obstacles and ascertain what is a fair price, its labor would be wasted, for, with constantly changing costs and market conditions, what would be a fair price today would not be a fair price tomorrow. On account of these conditions an injunction against a combination charging more than reasonable prices or more than any specific price would utterly fail to give adequate relief. The only way to give relief in such a case is to attempt to restore competition by breaking up the combination. This appears to be one basis for the dissolutions in the Standard Oil, Tobacco, and Powder cases. The American Can Company case, in which the court found that the company influenced prices, but refused to dissolve the consolidation on the ground that its influence was declining and would probably disappear within a reasonable time without the aid of judicial action, indicates also that control of prices, when no immediate relief is in sight, may furnish ground for dissolution.[1]

When a combination has exhibited a persistent and deeply seated tendency to resort to unfair and oppressive practices, the court, taking into account the difficulties of proof, the delay and expense of ascertaining whether the combination shall actually have complied with an injunction, and the fact that when great power is possessed there is a peculiar temptation to resort to oppressive practices, may deem it expedient to dissolve the combination, although an injunction possibly might furnish adequate relief. This was the view of the district court in the Corn Products Co. case—a case now before the Supreme Court on appeal.[2] In the

[1] In this case (234 Fed. 1019) the court said: "The defendant does fix the prices at which an overwhelming majority of the packers' cans are sold. It is the most potent factor in determining the price at which all of them are disposed, but its power to do so depends upon its making a fairly accurate estimate of market conditions. Any considerable increase in prices would promptly bring a host of new competitors into the field. It is neither certain nor probable that it will be able to maintain its relative position in the field. The business and resources of some of its competitors have been steadily growing, both relatively and absolutely. A continuation of the present conditions may well result in the development of some of them until competition will again control the market. It is by no means unlikely that this result may be attained even earlier than the public could begin to enjoy the benefits which the government hopes a dissolution would immediately confer."

[2] 234 Fed. 964. The court said (p. 1018): "None of these considerations seem to me sufficient to prevail over the wisdom of disintegrating a combination which has

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Great Lakes Towing Company[1] and the American Can Company cases,[2] however, long-continued and flagrant violations of the act did not cause the combinations to be dissolved in spite of the vigorous contention of the prosecution that dissolution was necessary in order to give adequate relief.

II

The supporters of the theory that the mere combination of competitors may violate the statute are confronted with the problem of showing wherein the mere union of previously independent competitors creates a restraint of trade. It is evident that the combination by wrongful practices may restrain trade, but, if the practices of the combination are exemplary, what is there in the unification of competitors which subjects it to attack?

The supporters of the theory that mere combination may be illegal advance two principal arguments to prove that a combination of competitors may be illegal although its practices are legal:

1. The destruction or material restriction of the general operation of competition which results from the general unification of competitors in a given field of business is in itself a restraint of trade. This is so, regardless of the fact that the combination imposes no restrictions upon the freedom of any trader nor deliberately impedes the course of trade in any way, and even though there may appear no danger that the combination in the future may

shown such an inveterate and incorrigible insistence upon interfering with the course of commerce which the law demands. . . . . The suit is, it is true, not punitive in character, but the stockholders are in such cases responsible for the conduct of the business by the officers in charge. Such loss as is involved in removing from their hands the power which they have so persistently used contrary to law is an inevitable, though unfortunate, incident in the enforcement of the statute.

"In all cases where the history of the combination has been such as this, the Supreme Court has declined to rest upon injunctions alone. The difficulties of proof, the delay, the cumbersome inquiry necessary to ascertain again whether the defendant shall have actually discontinued, all make against such a limitation. It may be safely assumed that evidence, such as was by chance available here, of the actual purposes of those in charge will never again exist. Without it, perhaps, it is doubtful whether the case could have been proved. Yet it is a reasonable assurance to take that, when an innate proclivity has so abundantly manifested itself over a period of years, it shall be disabled from further opportunity. No case, it seems to me, could more require a remedy, unless injunctions are to serve for the only remedy."

[1] 208 Fed. 733 and especially 217 Fed. 964.

[2] 230 Fed. 859 and especially 234 Fed. 1019.

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deliberately impede the course of trade by the exaction of unreasonable prices, the deterioration of goods or service, or the use of unfair practices. The argument is based on the theory that the prevalence of competition is promotive of the development of industry, of the discovery and adoption of new processes, and of a stimulus to serve the public, and that, when this stimulating influence of competition is substantially interfered with by the combination of a sufficient number of competitors, trade is restrained, even though no person in particular suffers any specifically ascertainable restriction of his freedom to buy and sell.

2. The statute is directed against the mere undue *power* over trade, as well as the positive impediments imposed upon the freedom of trade, when such power is obtained by the artificial means of combining independent plants rather than by normal growth. The reason for this is the danger, said to amount almost to a certainty, that dominating power over a market, when possessed, will be wrongfully exercised to the detriment of the public or of competitors of the combination.[1]

The first of these objections relates to the general and unpremeditated influence which a great combination, resulting in the destruction or substantial limitation of competition, exerts upon the development of trade—an effect entirely independent of possible deliberate wrongful practices of the combination. The second relates to the specific injuries which may follow from the exercise

[1] A third possible reason why a combination may be illegal is that it is formed with an illegal purpose. Direct proof of such purpose is rarely possible. It may be shown by the acts of the combination, which, even though apparently innocent and harmless when considered individually, may reveal an illegal purpose when considered collectively and as parts of a general plan (*Swift & Co.* v. *United States*, 196 U.S. 375 at p. 396). In such a case, however, the combination would fall in the class of combinations illegal because of their acts rather than because of their inherent nature. It may be shown, also, by the extent of the control acquired over the market (*United States* v. *Reading Co.*, 226 U.S. 324 at p. 370). This is an unsatisfactory test because it is generally possible to urge that the large combination is required to accomplish some legitimate purpose, such as the prevention of cut-throat competition or the realization of operating economies. Finally, the circumstances of the formation of the combination and perhaps the nature of its organization (as in the case of mere price agreements) may indicate an illegal purpose. Here again it is frequently possible to urge a legitimate purpose, such as prevention of cut-throat competition. A subjective test, such as purpose, is highly unsatisfactory, and objective tests, where possible, should be substituted.

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of its power in an oppressive manner. Neither of these arguments, however, relates at all to the elimination of competition caused by the combination of several competitors controlling an insignificant portion of the business. Expressions of opinion to the effect that every combination which eliminates competition between any two competitors, regardless of how small and insignificant, is a restraint of trade under the Sherman act are found, it is true, in the opinions of the lower courts in the Standard Oil and Tobacco cases. This, however, has never been the predominant view of the courts. Even in the Joint-Traffic Association case, before the adoption of the "rule of reason," the court expressly stated that the mere combination of competitors is not in every case illegal.[1] It is recognized that the combination of small and weak competitors, by increasing their competitive power, may stimulate rather than impair competition in the field of business as a whole, and it is with the general competitive situation that the law is concerned.

The answer of those who insist that the mere combination of competitors does not violate the statute to the argument that the general elimination or restriction of competition in a field of business in itself restrains trade, because it brings about a slackening in the development of industry and a lessened incentive to serve the public, is that it is based upon too broad a conception of restraint of trade. The more extreme of those who insist upon a narrow construction of restraint of trade hold that restraint of trade refers simply to impediments upon men's freedom to engage in business—that is, to the acts or agreements which tend to exclude them from certain callings or lines of business. The restraint may be either subjective or objective—subjective when imposed by a man on himself by a contract in which he restricts his freedom to pursue

[1] 171 U.S. 505 (1898). Mr. Justice Peckham said (p. 567): "We might say that the formation of corporations for business or manufacturing purposes has never, to our knowledge, been regarded in the nature of a contract in restraint of trade or commerce. The same may be said of the contract of partnership. It might also be difficult to show that the appointment by two or more producers of the same persons to sell their goods on commission was a matter in any degree in restraint of trade. We are not aware that it has ever been claimed that a lease or purchase by a farmer, a manufacturer, or merchant of an additional farm, manufactory, or shop, or the withdrawal from business of any farmer, merchant, or manufacturer, restrained commerce or trade within the legal definition of that term."

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a certain calling or business; or objective when imposed by strangers in the form of unfair and predatory competitive methods, threats, and coercion tending to drive out those who are in the business and to prevent outsiders from entering. This conception of restraint of trade does not include oppression of consumers, such as the exaction of extortionate prices, the limitation of output, or the deterioration of the quality of goods or service. It has never been followed by the Supreme Court and is now definitely discredited. It is best represented by Mr. Justice Holmes's dissent in the Northern Securities case[1] and by a Massachusetts case.[2]

The more moderate of those who insist upon a narrow construction of restraint of trade contend that restraint of trade includes every definite and specific restriction upon the freedom of others to buy or sell or conduct their business as they see fit. This concept includes the oppression of consumers as well as of competitors. As the use of many legitimate business methods involves a restriction of someone's freedom to buy, sell, or conduct his business as he sees fit, the restraint of trade condemned by the statute must be those restrictions on freedom either accomplished by unfair methods or carried to an unreasonable extent. The effect of a combination upon the freedom of others to trade may be considered from three points of view:[3] (1) its effect upon the competitors or

[1] 193 U.S. 197 at pp. 403–5.

[2] *Central Shade Roller Co.* v. *Cushman*, 143 Mass. 353 (1887). *In re Greene* 52 Fed. 104, at p. 116 holds exclusion of others an essential of monopoly.

[3] In the Standard Oil case (221 U.S. 1 at p. 52) Chief Justice White defined the evils which caused monopolies to be held illegal and which, he states later, became the basis for holding combinations to be illegal as in restraint of trade, as follows: "(1) The power which the monopoly gave to the one who enjoyed it, to fix the price and thereby injure the public; (2) the power which it engendered of enabling a limitation on production; and (3) the danger of deterioration in quality of the monopolized article, which, it was deemed, was the inevitable resultant of the monopolistic control over its production and sale."

In the Keystone Watch Case Company case (218 Fed. 502 at p. 518) Judge McPherson gives a broader interpretation of the manner in which trade may be restrained. He says: "Competitors must not be oppressed or coerced; fraudulent or oppressive rivalry must not be pursued. . . . . Then, too, prices must not be arbitrarily fixed or maintained. Ordinarily the play of the great forces that influence the market will determine prices, and these forces must be allowed to have their unhindered effect. And a corollary from this consideration is that an artificial scarcity must not be produced, since the effect of such a scarcity is to raise prices to the consumer. Moreover, the public is injured if the quality be impaired, so that the old price buys a

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prospective competitors of the combination; (2) its effect upon the customers, either of the combination or of its competitors, and its effect upon the enterprises supplying it or its competitors with raw materials and supplies[1]; (3) the effect upon the freedom of the enterprises composing the combination.

worse article; and other injuries are done, if the wages of the laborer be arbitrarily reduced and if the price of raw material be artificially depressed."

In his dissenting opinion in the Harvester case (214 Fed. 1014) Judge Sanborn says that the only restraints prohibited by the act are those which unduly injure the public by "(1) raising the prices to the consumers of the article which they affect, (2) limiting their production, (3) deteriorating their quality, (4) decreasing the wages of the laborers and the prices of the materials required to produce them, or (5) practicing unfair and oppressive treatment of competitors."

Judge Buffington in the Steel Trust decision (223 Fed. 55 at p. 61) gives a similar interpretation of the manner in which trade may be restrained. Referring to the statement of the Supreme Court in *Nash* v. *United States* (229 U.S. 373) that "only such contracts and combinations are within the act, as by reason of interest or the inherent nature of the contemplated acts prejudice public interests by unduly restricting competition or unduly obstructing the course of trade," he says: "The public interests thus prejudiced consist of, first, competitors in trade; second, the purchasing public, and, third, the general public. For example, if this Steel Company was in any way guilty of unfair business competition, if it was guilty of such conduct as to unfairly force a competitor out of the steel business, or if it unfairly prevented those who wanted to go into the steel business from doing so, then the Steel Company was, in the judgment of the Supreme Court, prejudicing the public interests by unfairly driving individuals out of business or preventing them from entering it, and it was also injuring the public by unduly restraining trade. So, also, if this Steel Company was restricting output in order to exact unfair price, if it was buying up competing plants and dismantling them to needlessly restrict output, if it was by reason of its controlling power furnishing the public with inferior goods, if it was using its power needlessly and unfairly to reduce wages, if it was seeking to deceive purchasers by false appearances of competition, when in fact it owned or controlled such seeming competition—then it was prejudicing, not only that part of the public which desired to buy steel, but the public interests generally by unduly obstructing the course of trade and thereby preventing the steel business from moving in its natural and normal channel.

"A study of the various anti-trust cases shows that such unfair, prejudicial acts as we have thus instanced have been found where the Sherman law has been held to have been violated."

[1] Since combinations to raise wages are no longer at common law combinations in restraint of trade, at least in so far as their direct effect upon wages is concerned (labor now being held by the common law not to be a commodity), the artificial depression of wages by a capitalistic combination would likewise not appear to be a restraint of trade. But even if the artificial depression of wages by a combination of capital be a restraint of trade, the question still remains whether it is a restraint of *interstate* commerce, assuming the products manufactured by the workers were intended for sale in other states. Wage bargains made locally between the employer and his workers for the sale of labor in the same place, even though the labor was to be employed on products intended for interstate commerce, would not appear to be interstate commerce any more than a local sale of coal to be consumed in the locality in the manufacture of products for interstate commerce.

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The combination may restrict the freedom of its competitors or of prospective competitors by the threatened or actual use of all manner of unfair competitive methods, such as predatory price-cutting, boycotting, or discrimination against those doing business with the competitors or prospective competitors of the combination, and by restrictions in the contracts of those selling out to the combination against their re-entering the business in competition with the combination.

The combination may restrict the freedom of those buying from, or selling to, it or its competitors (*a*) by discriminating against persons dealing with its competitors, (*b*) by using its control over the market to bring about a general increase of prices to an unreasonable level, thus unreasonably restricting the public's ability to procure the goods, the prices of which have been increased, (*c*) by unreasonably depressing the prices of materials and supplies used by it, making it difficult or impossible for dealers in them to procure a fair profit, except through the exaction of unreasonable prices from third parties, or (*d*) by failure to render adequate service, either by unduly limiting production or by deteriorating quality.

The freedom of the enterprises composing a combination may be restricted, when they retain their separate identity, by the delegation of the control of their business to the combination. This is one of the reasons for the illegality of pools and joint selling agencies.[1] In the case of the outright sale of a business to a consolidation or of the purchase of a controlling stock interest by a consolidation, this issue is not raised, since the control and ownership are not divorced.

Concrete and specific restrictions upon the freedom to buy or sell such as those mentioned above, most supporters of the "specific impediment" theory of restraint of trade would doubtless concede to be embraced by the statute. None of these forms of restriction, however, directly and necessarily follow from the formation of a combination. The combination may pay and charge reasonable prices,

[1] *United States* v. *Joint-Traffic Association*, 171 U.S. 505 at pp. 563, 564; *Addyston Pipe and Steel Co.* v. *United States*, 175 U.S. 211 at p. 245; *Continental Wall Paper Co.* v. *Voight*, 212 U.S. at p. 256.

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and may confine itself to the use of fair competitive methods. In order to impose restraints of this direct and specific character, the combination must resort to wrongful practices. The mere existence of the combination does not cause restraints of this kind.

Two questions arise in connection with the problem whether the slackening of the development of industry and the lessening of the incentive to serve the public, which are said to follow the elimination or substantial limitation of competition, should cause combinations seriously limiting competition in their field of business to be held in restraint of trade. They are:

1. In case the combination imposes no restrictions upon the freedom of anyone who chooses to enter the field in competition with it, should the combination be held responsible if competition fails to spring up?

2. Is not the likelihood that the results feared will be realized too remote to justify condemning a combination because of the possibility that they will be realized?

In connection with the first question it is pointed out that, although the formation of the combination may cause a substantial limitation upon competitive activity in the field of business, the continuance of the combination does not mean that competition is excluded from the field of business. As long as the combination abstains from unfair competitive methods, competitors are free to enter the field on fair terms. If they do not choose to enter under these circumstances, it is contended that it is unreasonable to hold the combination responsible for the lack of substantial competition in the field. Such an extraordinary situation as substantial competition failing to spring up when assured of fair treatment probably would be due only to the ability of the combination to render superior service. To condemn the combination in that case because competition failed to spring up would be to condemn it for its efficiency.

In connection with the second question a distinction is drawn between the power of competition to affect price and its power to stimulate technical progress and attentive service. Price competition is ordinarily the most severe form of competition. Greater competitive strength is required to produce price competition than

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to produce service competition or to stimulate technical progress. Although many combinations have been formed which have been able substantially to eliminate price competition, few, if any, have so completely dominated the market as not to leave a powerful stimulus for technical development and efficient service to the public.[1]

But, granting the possibility of a combination so thoroughly eliminating competition as to lessen materially the incentive for technical progress and for efficient service, it is contended that the likelihood that the incentive will fail to be restored is too remote to justify condemning the combination in advance because competition *might* fail to develop. It is pointed out that there is practically no field of industry in which competition has failed to increase in strength subsequent to the formation of a combination. The competition, it is true, has not always been strong enough to introduce serious price competition. Perhaps the competitors have not desired that. It has in general been strong enough, however, to stimulate technical development and to sustain a keen incentive to serve the public well. The harvester, steel, can, glucose, and sugar industries come to mind, in which there has been a considerable growth of new and old competitors of combinations. Even the Standard Oil Company, which has probably occupied as strong a position in the market as any combination and whose ruthless competitive methods naturally have discouraged the entrance of competitors, has always had substantial competition to deal with. Although the high costs of the independents have made it impossible for them to affect prices as they otherwise might, it is safe to assert that they have been a material spur to technical progress and to better service. In view of the virtual certainty that competition, if given a fair chance, will spring up with sufficient strength at least

[1] There appears to be a tendency also for large combinations to become bellwethers with respect to price changes. The combination may not possess sufficient power to increase prices regardless of competition, but the changes initiated by the combination are the signal for similar action on the part of independents. In this way the combination becomes an instrumentality for introducing uniform price policy into the trade. These informal communities of interest have been ignored in the past probably because it has been felt that they were too unstable to be formidable. With the growth in co-operative spirit in business, there is reason to believe that these communities of interest may become highly important.

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to provide a substantial stimulus to technical development and to attentive service, it is contended that it is highly unjust to condemn combinations *in advance* upon the ground that they lessen the stimulus to technical progress and to efficient service.

III

The second contention of those who hold that the mere combination of competitors may violate the statute, irrespective of the practices of the combination, is that restraint of trade as used in the statute embraces the mere *power* to dominate a field of business, when such power is created by the unification of competitors, regardless of whether the power is injuriously exercised or not. A combination of competitors which is the means of creating such power is therefore by that very fact illegal, regardless of its conduct.

Those who insist that actual unreasonable impediments upon someone's freedom to buy or sell are necessary to constitute restraint of trade answer that this argument disregards the plain words of the statute. The statute says nothing about mere undue power over trade. It simply prohibits combinations which restrain trade. This must mean the actual imposition of unreasonable impediments upon the freedom of someone to buy or to sell or to conduct his business as he sees fit, not simply the mere possession of great power over a field of business. The possession of extraordinary power sufficient to enable the possessor seriously to oppress others, should he care to exercise it, is one thing; the actual oppressive use of the power is another thing. When combinations have dominated a field of business, perhaps the usual result has been that they have used their power to restrict the freedom of others. The fact, however, remains that the mere possession of the power does not necessarily mean that oppression will result. The statute deals with actual restraints imposed on trade, not probable or conjectural restraints. It furnishes no ground for holding a combination to be in restraint of trade as a matter of law, regardless of whether as a matter of fact it has restrained trade.

To hold combinations illegal because of their power over trade rather than because of their actual effect upon it violates the spirit and the purpose of the statute. The purpose of the statute is not

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to restrict but to preserve the freedom of trade. It imposes restrictions merely to prevent individuals from imposing greater ones. Because its purpose is to promote rather than to restrict the freedom of trade, it should be interpreted as restricting individual liberty only when necessary to prevent the imposition of greater restrictions. The protection of individual freedom, however, does not require that the mere power to dominate a field of commerce be prohibited. Individual liberty is sufficiently protected by prohibiting the wrongful use of the power. To prohibit combinations which may be organized for legitimate business purposes because of the mere power which they acquire is to use a statute designed to protect and foster enterprise as a means of severely limiting enterprise.[1]

The proposed rule cannot be upheld on the ground that the acquisition of a dominating power over a field of business indicates a purpose of restraining trade. The dominion acquired over the field of business may be evidence of an intention to restrain trade, as the Supreme Court has held in the Standard Oil,[2] Tobacco,[3] and Reading[4] cases. To hold it conclusive evidence of an intent to restrain trade, however, would violate the principle that a person is presumed innocent until proved guilty.[5] The unreasonableness

[1] In the Standard Oil and Tobacco cases the court clearly recognized that to interpret the restrictions imposed by the statute too broadly would be to defeat the purposes of the statute. The rule of reason was announced in order to avoid an interpretation of the statute which, under the guise of prohibiting restraints of trade, would impose innumerable and intolerable restrictions upon the freedom to do business. In the Tobacco case the court, referring to the holding in the Standard Oil case, said (221 U.S. 106 at pp. 179–80): "It was held . . . . that the duty to interpret, which inevitably arose from the general character of the term restraint of trade, required that the words restraint of trade should be given a meaning which would not destroy the individual right to contract and render difficult, if not impossible, any movement of trade in the channels of interstate commerce—the free movement of which it was the purpose of the statute to protect. . . . . The necessity for not departing in this case from the standard of the rule of reason, which is universal in its application, is so plainly required in order to give effect to the remedial purposes which the act under consideration contemplates, and to prevent that act from destroying all liberty of contract and all substantial right to trade, and thus causing the act to be at war with itself by annihilating the fundamental right of freedom to trade, which, on the very face of the act, it was enacted to preserve, is illustrated by the record before us."

[2] 221 U.S. 1 at p. 75. [3] 221 U.S. 106 at p. 182. [4] 226 U.S. 324 at p. 370.

[5] See Judge Sanborn's dissent in the Harvester case (214 Fed. 987 at p. 1003).

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of such a rule stands out with particular sharpness in the case of old-established combinations which have demonstrated by good conduct that they have no intent to restrain trade. In such cases the presumption of guilt based on the mere proportion of the business controlled is contrary to facts which are clearly possible of demonstration.

IV

Taking up the objections to the legality of the combination of competitors from the standpoint of those who deny that illegal practices are necessary to violate the statute, we find that the first question is whether the mere elimination or substantial restriction of competition in a field of business resulting from the combination of competitors constitutes a restraint of trade because of its effect upon the general progress of industry and upon the incentive to serve the public. The question has never been exhaustively considered by the courts, although frequent statements are found in the cases that it is the policy of the law to encourage competition and that the law regards impediments to the general prevalence of competition as restraints of trade, and although among the reasons given for regarding impediments to the general prevalence of competition as restraints of trade are the detrimental effects of the absence or limitation of competition upon technical progress and upon the incentive to serve the public efficiently. In the recent Union Pacific case[1] the Supreme Court expressly accepts the effect of the consolidation upon the incentive for efficient service as one of the grounds for holding the consolidation illegal.

From the standpoint of economics there is no reason why restraint of trade should be understood to mean only such things as the exaction of exorbitant prices, undue restriction of output, deliberate and unreasonable deterioration of goods or service, the use of unfair competitive methods toward competitors or prospective competitors, the binding of others by unreasonable restrictive contracts, etc. These are the most clear-cut and definite forms of restraint, it is true. Their effects can be most clearly seen, their existence most easily ascertained. Nevertheless the weakening

[1] 226 U.S. 61 at p. 88 (1912).

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of the incentives which stimulate technical progress and the desire to serve the public impede trade in quite as real a way as the more definite forms of restraint. If restraint of trade means impediments upon trade, then impairing the stimuli to technical progress and good service must be a restraint of trade. The fact that a combination does nothing to interfere with the restoration of the stimuli to technical development and to better service is immaterial if the combination created the situation which weakened the stimuli.

From the standpoint of law the question is: What is the probability that a weakening of the stimuli to technical development and of the incentive to give the best possible service will result from a combination eliminating or substantially limiting competition in a field of business? Is the probability great enough to justify condemning the combination?

When the question is put to the courts in this form, it is extremely doubtful if they will feel warranted in condemning the combination. It is true that the Union Pacific case apparently authorizes a contrary view. Among the reasons for holding the consolidation of the Union Pacific and Southern Pacific illegal the court gave:[1]

> It [the consolidation] directly tends to less activity in furnishing the public with prompt and efficient service in carrying and handling freight and in carrying passengers, and in attention to and prompt adjustment of the demands of patrons for losses, and in these respects puts interstate commerce under restraint.

Experience, however, seems to show that competition is swift to spring up after the establishment of combinations, and, although this competition often has little influence upon prices, it appears sufficient to stimulate technical development and to maintain an incentive to give good service. In view of the great probability that competition will not remain so feeble that the stimuli to progress and attentive service will be impaired, it seems improbable that courts will be willing to hold combinations illegal because of this possibility. The competition required to maintain a strong incentive to give good service, however, is probably stronger than that necessary to prevent technical stagnation, and the courts may

[1] *United States* v. *Union Pacific R.R. Co.*, 226 U.S. 61 at p. 88.

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follow the Supreme Court in the Union Pacific case and hold that the possible effects of powerful combinations upon the incentive to give good service brings them within the prohibitions of the statute.[1]

V

The mere combination of competitors is said to violate the statute, in the second place, when it creates a dominating power over a field of business or at least when it presents a dangerous probability of developing a dominating control over the field of business. The danger that dominating power over a field of business will be exercised oppressively is said to make the mere acquisition of such power by means of combination illegal, regardless of

[1] It is possible to argue that the substantial limitation upon competition in a field of business as a result of a combination of competitors is illegal, even though the prices charged by the combination are no more than reasonable, on the ground that the public is entitled to the benefit of competition, which might drive prices below a reasonable level. In other words, the public is entitled to the benefit of cut-throat competition, and to deprive the public of this benefit is a restraint of trade, even though, at the best, the public would enjoy cut-throat prices only temporarily and might in the end be compelled to give all or more than it gained in higher prices or creditors' losses. Authority for this argument is found in the Trans-Missouri Freight Association and Joint-Traffic Association cases. In each of these cases it was earnestly pressed that, since the railroads had the right to charge reasonable rates, they had the right to combine in order to maintain such rates, that the rates actually fixed by the combinations were reasonable, that combinations were necessary in order to maintain reasonable rates and to prevent destructive competition which would result in great loss and damage to the roads, impairment of the efficiency of service, and concentration of control of the railroad system in a few powerful survivors who could raise rates to suit themselves—precisely the result which the statute was designed to prevent. The court, however, answered that the fact that each company had the right to charge reasonable rates did not give it the right to enter into an agreement not to take less (*United States* v. *Trans-Missouri Traffic Association*, 166 U.S. 290 at p. 339). If the policy of the act should lead to disaster, the remedy is in Congress, not the court (Freight Association case, 166 U.S. 339, and Joint-Traffic Association case, 171 U.S. 505 at p. 577).

It is doubtful whether the court would uphold this doctrine under the "rule of reason." A lower court in *United States* v. *Hamburgh-American Line*, 216 Fed. 971, and *United States* v. *Prince Line Ltd.*, 220 Fed. 230, decided contrary to the Freight Association and Joint-Traffic Association cases on precisely the same point. Other cases holding that the restriction of cut-throat competition is not restraint of trade are: *Hare* v. *Railway Co.*, 2 Johns and H. 8; *Chappell* v. *Brockway*, 21 Wend. 157 (1839); *Manchester, etc., R. Co.* v. *Concord R. Co.*, 66 N.H. 127 (1889); *Rafferty* v. *Buffalo City Gas Co.*, 37 App. Div. (N.Y.) 618 (1899); *John D. Parke & Sons Co.* v. *National Wholesale Druggists Association*, 175 N.Y. 1.

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whether the power has been oppressively exercised or not.[1] This question should be examined in the light of the meaning attached to restraint of trade at common law.

The question at common law, except in conspiracy cases (of which there were practically none), was not whether the agreement or combination subjected the parties to a liability or a penalty, but whether it was contrary to public policy. It was a question, not of punishing the parties, but of determining whether the agreement was of such a character as the courts would enforce.

In determining whether or not an agreement or combination was contrary to public policy, the courts appear to have looked, not to the actually realized effects of the agreement or combination, but to the effects which might reasonably be expected to follow from it. Had the courts been confronted with the duty of inflicting a penalty, they might have insisted upon actual proof of wrong committed before holding the defendant. The question being merely whether the agreement was or was not in accord with public policy, the courts not unreasonably took the stand that the test of public policy was what was *likely* to be done under the agreement, not what *in fact* had been done. The courts noted that, when competition

[1] The question whether the acquisition of a dominating power over a field business by normal increase in a business not fostered by unfair competitive methods or by the absorption of other enterprises is legal has never been presented for decision. There are a number of *dicta*, however, to the effect that there is no limit to the size to which a business might grow by "normal" methods. In the Standard Oil case the court said that nowhere at common law can there be found a prohibition against the creation of a monopoly by an individual, that the prohibitions of the common law against individuals were directed, not against the creation of a monopoly, but against acts which produced the consequences of monopoly, and that this restriction of the prohibitions to avoid the inclusion of the mere growth of individual enterprises was necessary to avoid undue restriction upon individual freedom (221 U.S. 1 at pp. 55, 56). The court held that the words "to monopolize" and "monopolize" in the second section referred, not to the growth of business by normal methods no matter how large the enterprise became, but to growth by abnormal methods which would be considered restraints of trade. The purpose of the second section was to apply to individuals the prohibitions which the first section applied to combinations (221 U.S. 1 at pp. 61, 62). In the Harvester case the district court, although holding the combination illegal irrespective of its practices, stated that there was no limit under our law to which a business might not independently grow (214 Fed. 897 at p. 1000). In the Eastman Kodak case it is also stated that there is no limit to which a business may not grow by normal methods (226 Fed. 52 at p. 80).

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was substantially eliminated in a field of business, it was reasonable to expect, taking human nature as it is, that the power thus secured over the market would be exercised to the injury of the public, and hence arose the rule that combinations or agreements substantially eliminating competition in a field of business are contrary to public policy, irrespective of their actual effects, because of the results which are likely to follow from them. In making the probable results of the agreement the test of its conformity to public policy, the courts merely followed their general practice in determining whether or not an agreement is contrary to public policy. In every case the mere reasonable probability that the agreement will produce results regarded as contrary to public policy is sufficient to vitiate it.

The cases holding agreements contrary to public policy because of their probable effects upon trade are numerous:

Atcheson v. *Mallon*[1] was an action for an accounting on an agreement between two bidders for the collection of the town taxes to share profits and losses. It appeared that both parties put in proposals, that they had shown each other their proposed bids before submission, and it did not appear that any change had been made in them in consequence of the mutual knowledge. The court said:

> It is not necessary, for the determination of this case, to inquire whether the effect of the agreement between the parties was, in fact, detrimental to the town of Oswegatchie. The true inquiry is, is it the natural tendency of such agreements to injuriously influence the public interests? The rule is that agreements which in their necessary operation upon the action of the parties tend to restrain their natural rivalry and competition, and thus result in the disadvantage of the public or of third parties, are against the principles of sound public policy and are void.[2]

Anderson v. *Jett*[3] involved an agreement between the owners of two steamboats, the only rivals in the trade, to share net profits in fixed proportion, each boat, however, to bear its own expenses. In event of the owner of either going out of business, notice was to

[1] 43 N.Y. 147 (1870).

[2] 43 N.Y. 147 at p. 149.

[3] 89 Ky. 375 (1889).

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be given the other party and the retiring party was not to engage in the trade within a year. The court said:

> That public policy that encourages fair dealing, honest thrift, and enterprise among the citizens of the Commonwealth, and is opposed to monopolies and combinations because unfriendly to such fair dealing, thrift, and enterprise, declares all combinations whose object is to destroy or impede free competition between the several lines of business engaged in utterly void. The combination or agreement, whether or not in the particular instance it has the desired effect, is void.[1]

Judd v. *Harrington*[2] involved a combination of brokers and dealers in, and butchers of, sheep and lambs for the alleged purpose of guarding their business interests from loss by unreasonable competition. The brokers agreed to sell only to members of the butchers' association and the butchers to purchase only from members of the brokers' association. The brokers agreed to pool their commissions, except such as were paid to the butchers' association. The court said:

> The real purpose and intent of the agreement was to suppress competition in an article of food, *and as such agreements tend to enhance the price, they are regarded as detrimental to the public interest* and forbidden by public policy. . . . . Courts will not aid parties seeking to enforce such an agreement, irrespective of the question whether it in fact produced the evil results to which it tended or was harmless. It is said that the purpose was to facilitate the transaction of business and save useless expense. It is quite likely that the agreement did enable the parties to transact their business with less labor and expense, and that may be said of nearly all combinations; but that circumstance cannot save them from condemnation when they tend to prejudice the public. *The illegal character of the agreement appeared upon its face and was a necessary legal conclusion from its provisions.*[3]

In holding contrary to public policy an agreement between substantially all salt producers in a large salt-producing territory for the purpose of regulating the price and the grade of salt, the Supreme Court of Ohio in *Central Ohio Salt Co.* v. *Guthrie* said:

> The clear tendency of such an agreement is to establish a monopoly and to destroy competition in trade, and for that reason, on grounds of public policy, courts will not aid in its enforcement. It is no answer to say that competition in the salt trade was not in fact destroyed or that the price of the commodity

[1] 89 Ky. 375 at p. 380.

[2] 139 N.Y. 105 (1893).

[3] Italics are mine.

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was not unreasonably advanced. Courts will not stop to inquire as to the degree of injury inflicted upon the public, it is enough that the inevitable tendency of such contracts is injurious to the public.[1]

People v. *Sheldon*[2] involved an agreement between all the retail coal dealers at Lockport, except one, by which the retail price of coal was to be fixed and kept uniform. The agreement provided that the price should at all times be reasonable and should exceed the current price at Rochester and Buffalo by not more than the additional freight. Certain members of the association were indicted under a section of the penal code making it a misdemeanor for two or more to conspire "to commit an act injurious to the public health, to public morals, or to trade or commerce." The question was whether there was a conspiracy. The trial judge charged that, if the agreement was entered into for the purpose of controlling the price of coal and eliminating competition between the parties, it was illegal and that acts done by a combination in pursuance of it constituted a conspiracy. The Court of Appeals sustained the trial court in holding the agreement illegal, in spite of the fact that it appeared that no injury had resulted from the agreement. The court said:

If the validity and legality of an agreement having for its object the prevention of competition between dealers in the same commodity depend upon what may be done under the agreement, and it is to be adjudged valid or invalid according to the fact whether it is made the means for raising the price of a commodity beyond its normal and reasonable value, then it would be difficult to sustain this conviction, *for it affirmatively appears that the price fixed for coal by the exchange did not exceed what would afford a reasonable profit to the dealers*. . . . . But the question here does not turn on the point whether the agreement between the retail dealers in coal did, as a matter of fact, result in injury to the public or to the community in Lockport. The question is, Was the agreement one, in view of what might have been done under it and the fact that it was an agreement the effect of which was to prevent competition among the coal dealers, upon which the law affixes the hand of condemnation, and which it will not permit? It has hitherto been an accepted maxim in political economy that "competition is the life of trade." The courts have acted upon, and adopted, this maxim in passing upon the validity of agreements the design of which was to prevent competition in trade, and have held such

[1] 35 Ohio St. 666 at p. 672.

[2] 137 N.Y. 251.

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agreements to be invalid. . . . . The gravamen of the offense of conspiracy is the combination. Agreements to prevent competition in trade are, in contemplation of law, injurious to trade, because they are injuriously used. . . . . If agreements and combinations to prevent competition in prices are, or may be, hurtful to trade, the only sure remedy is to prohibit all agreements of that character. If the validity of such an agreement was made to depend upon actual proof of public prejudice or injury, it would be very difficult, in any case, to establish the invalidity, although the moral evidence might be very convincing. We are of opinion that the principle upon which the case was submitted to the jury is sanctioned by the decisions in this state, and that the jury were properly instructed that, if the purpose of the agreement were to prevent competition in the price of coal between the retail dealers, it was illegal and justified the conviction of the defendants.[1]

The foregoing cases all involve combinations in which the combining enterprises remained independent. The rule has been applied also to consolidations involving unification of ownership and of operation. The two leading cases are *Richardson* v. *Buhl*[2] (Diamond Match case) and *State* v. *Standard Oil Co.*[3] Both cases involved the legality of the absorption of certain companies by combinations. The gist of opinion in *Richardson* v. *Buhl*, on the criterion by which combinations are to be judged, is quoted in *State* v. *Standard Oil Co.* case. In this case the court said:

Much has been said in favor of the objects of the Standard Oil Trust and what it has accomplished. It may be true that it has improved the quality and cheapened the cost of petroleum and its products to the consumer. But such is not one of the usual or general results of monopoly; *and it is the policy of the law to regard not what may but what usually happens.* Experience shows that it is not wise to trust human cupidity where it has the opportunity to aggrandize itself at the expense of others. The claim of having cheapened the price to the consumer is the usual pretext on which monopolies of this kind are defended and is well answered in *Richardson* v. *Buhl* (77 Mich. 632). After commenting on the tendency of the combination known as the Diamond Match Company to prevent fair competition and to control prices, Champlin, J., said: "It is no answer to say that this monopoly has in fact reduced the price of friction matches. That policy may have been necessary to crush competition. *The fact exists that it rests in the discretion of this company at any time to raise the price to an exorbitant degree.*[4]

A *dictum* in *Harding* v. *American Glucose Co.*[5] supports the same view. In this case the execution of an option which the combina-

[1] Italics are mine.
[2] 77 Mich. 632.
[3] 49 Ohio St. 137 (1892).
[4] Italics are mine.
[5] 182 Ill. 551 (1899).

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tion had secured on the plant of a Peoria corporation was enjoined on the ground that the combination violated the Illinois anti-trust law. Referring to the legality of combinations at common law, however, the court said:

The material consideration in the case of such combinations is, as a general thing, *not that prices are raised, but that it rests in the power and discretion of the trust or corporation taking all the plants of the several corporations to raise prices.* . . . .

In this case the proof showed that upon the completion of the new organization the price of glucose and its products had been increased.[1]

[1] Other cases on the proposition that the probable effects of combinations are sufficient to bring the combinations within the ban of public policy are:

Hilton v. *Ecksersley*, 6 E. and B. 47 (1855). Lord Campbell, C. J., construing the agreement in question (which was held unenforceable), said (p. 65): "I do not think that any averment is necessary as to what has been done under it, or as to any mischief which it has already produced. We are to consider what may be done under it, and what mischief may thus arise. . . . . "

Nester v. *Continental Brewing Co.*, 161 Pa. St. 481 (1894):

"The test question, in every case like the present, is whether or not a contract in restraint of trade exists which is injurious to the public interests. If injurious, it is void as against public policy. Courts will not stop to inquire as to the degree of injury inflicted. It is enough to know that the natural tendency of such contracts is injurious."

Brown v. *Jacobs' Pharmacy Co.*, 115 Ga. 429 (1902) at p. 434:

"It is the nature or character and tendency of the agreement which renders it objectionable, whether in fact the parties to it succeed in restraining trade generally, or stifling competition or not."

In *Anderson* v. *Shawnee Compress Co.*, 17 Ark. 231 (1906), referring to contracts in restraint of trade, the court said:

"It is immaterial in determining the legality of such contracts whether or not it was entered into with any evil intent, but the material consideration is its injurious tendency and the power thereby given to control prices. Nor, in order to vitiate a contract, is it essential that its result should be a complete monopoly. It is sufficient if it really tends to that end, and to deprive the public of the advantages derived from free competition."

Some courts, it is true, hold, even with respect to the question whether or not an agreement did or did not violate public policy, that the mere undue power over trade is insufficient. These courts, however, are decidedly in the minority The most conservative view is that of the Massachusetts court, which has held that even an actual raising of prices is immaterial so long as the combine does not look to affecting outside competition.

In *Central Shade Roller Co.* v. *Cushman*, 143 Mass. 353 (1887), the legality of a combination of three manufacturers of roller shades who formed a corporation to take their entire output for three years at a price subject to the control of three-fourths

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In the recent Standard Oil dissolution suit the Supreme Court examined the meaning of restraint of trade at common law. The court found that the phrase was not confined to acts or agreements as a result of which actual impediments had been imposed upon trade, but that it also included acts or agreements which unduly restricted competitive conditions or which gave evidence of a purpose to place unreasonable impediments upon trade, because of the natural *tendency* of these acts and agreements to result in evils which were regarded as contrary to public policy. The court said:

> It came, moreover, to pass that contracts or acts which it was considered had a monopolistic *tendency*, especially those which were thought to unduly diminish competition and hence to enhance prices—in other words, to monopolize—came also in a generic sense to be spoken of and treated as they had been in England, as restricting the due course of trade and therefore as being in restraint of trade.[1]

And again:

> Without going into detail, and but briefly surveying the whole field, it may be with accuracy said that the dread of enhancement of prices and of other wrongs which *it was thought* would flow from the undue limitation of competitive conditions caused by contracts or other acts of individuals or corporations led, as a matter of public policy, to the prohibition or treating as illegal all contracts or acts which were unreasonably restrictive of competitive conditions, either from the nature or character of the contract or act, or where the surrounding circumstances were such as to justify the conclusion that they had not been entered into or performed with the legitimate purpose of reasonably

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of the stockholders, the manufacturers to act simply as selling agents of the corporation, was under consideration. The court said: "It [the agreement] does not look to affecting competition from outside—the parties have a monopoly of their patents—but only to restrict competition in price between themselves. Even if such an agreement tends to raise the price of the commodity, it is one which the parties have a right to make. To hold otherwise would be to impair the right of persons to make contracts, and to put a price on the products of their own industry.

"But we cannot assume that the purpose and effect of the combination are to unduly raise the price of the commodity. A natural purpose and a natural effect are to maintain a fair and uniform price, and to prevent the injurious effects both to producers and consumers of fluctuating prices caused by undue competition. When it appears that the combination is used to the public detriment, a different question will be presented from that now before us. The contract is apparently beneficial to the combination and not necessarily injurious to the public, and we know of no authority or reason for holding it to be invalid as in restraint of trade or against public policy."

[1] *Standard Oil Co.* v. *U.S.*, 221 U.S. 1 at p. 57 (italics are mine).

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forwarding personal interest and developing trade, but on the contrary were of such a character as to give rise to the inference or presumption that they had been entered into or done with the intent to do wrong to the general public and to limit the right of individuals, thus restraining the free flow of commerce and *tending to bring about the evils*, such as enhancement of prices, which were considered to be against public policy.[1]

It may be objected to these common-law cases that in every instance a purpose to restrain trade is clearly evident and that, therefore, a condemnation of the agreements because of their *probable* effects was justifiable, but that it does not follow that a similar condemnation of an agreement or combination because of its probable consequences is justified when a purpose to place unreasonable impediments upon trade is not evident. It is contended that the consolidation of competitors into a single operating organization which may be for the purpose of creating more efficient production machinery as well as to control the market offers in itself no evidence of an illegal purpose.

This attempt to distinguish between the probability of evil results following from an illegal purpose and from an undue control over the market is strained and artificial. Evidence of a purpose unreasonably to restrain trade may render otherwise innocent acts illegal[2] and may be important in doubtful cases.[3] It is not, however, an adequate test to determine the probability of oppressive practices following the formation of powerful combinations. In the first place, few, if any, combinations involving substantial control of the market are formed with unmixed motives. The founders have in mind the advantages of a dominant position in the market as well as the operating economies of combination. It is probably true that most combinations have been carried farther than was essential to realize the greatest operating economy, in order to obtain the advantages of great power in the market. In the second place, a clear purpose to dominate the market is not self-evident in combinations in which the individual combining enterprises lose their independence and are consolidated into a

[1] 221 U.S. 58 (italics are mine).

[2] *Swift & Co.* v. *United States*, 196 U.S. 375; *United States* v. *St. Louis Terminal Association*, 224 U.S. 383 at p. 394.

[3] *United States* v. *Reading Co.*, 226 U.S. 324 at p. 370.

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single enterprise involving unity of ownership and of operating organization. It is always possible to maintain that these consolidations are formed for the purpose, not of gaining control over the market, but of creating more efficient productive machinery. The use of evident purpose as a test of the likelihood of evil effects resulting from the combination would simply be an inducement to combination in the form of consolidations, instead of price-fixing agreements, pools, and other forms of combination, in order to cloak the real illegal purpose. Even in the case of such forms of combination as price-fixing agreements and pools in which an illegal purpose is more evident, the attempt would be made (as it was successfully made in the Hamburgh-American Line and the Prince Line cases) to justify the combination as simply designed to prevent cut-throat competition and to eliminate the wastes of competitive marketing. Finally, even if no wrongful purpose exists when the combination is first formed, if a dominating power is acquired over the market, a wrongful purpose is likely to develop, for possession of great power is a temptation to use it for selfish purposes. If the probability of wrongful practices resulting from a combination is to furnish a basis for holding it illegal, the test should be the power possessed over the market rather than the evidence of an illegal purpose. In putting their decisions upon the basis of the power possessed over the market rather than the purpose evidenced, the courts seem to have adopted the sounder rule.

VI

Does the common-law meaning of restraint of trade, holding combinations possessing undue and dangerous power over a field of business to constitute by that very fact unreasonable restraints of trade, apply in the case of the Sherman act? Did Congress intend by the act to penalize every agreement and combination which at common law was deemed contrary to public policy, or did Congress intend to penalize only such agreements and combinations as in fact placed unreasonable impediments upon trade?

It may be argued that the rule of interpretation that common-law terms when used in statutes are to be understood in their common-law sense, when there is no intention manifest that they

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are to be taken in a different sense, does not apply to "restraint of trade" in the Sherman act, because it is unjust to apply to a penal statute a conception of restraint of trade which is very broad because it was developed in cases where the question was not whether the agreement was a tort or a crime, but simply whether it was contrary to public policy. As suggested above, it is said to violate the principle that everyone is presumed innocent until proved guilty to hold one guilty because of mere probability that one will restrain trade.

The decisions, however, seem to establish that "restraint of trade" in the Sherman act means the acts and agreements which were considered contrary to public policy at common law. The question was discussed at length in the Standard Oil case. The court was confronted in this case with the problem of reconciling the sweeping language of the statute with its obvious purpose. On its face the statute prohibits every contract or combination in restraint of trade without qualification. To apply this prohibition literally would have impaired the freedom of trade rather than protected it, because it would have prohibited many normal and legitimate business practices which incidentally restrain trade. Since the law was designed to promote rather than to restrict freedom of trade, the court held that restraint of trade must be understood in a narrower sense. In the absence of any standard of interpretation in the statute, the court held that the term must refer to the restraints which were contrary to public policy at common law and that the standard of interpretation was therefore the standard used by the common law.[1]

[1] The court expressed its understanding of the standard of interpretation which was to be applied to the general language of the statute as follows (221 U.S. 60): "Thus not specifying, but indubitably contemplating and requiring, a standard, it follows that it was intended that the standard of reason which had been applied at the common law, and in this country in dealing with subjects of the character embraced by the statute, was intended to be the measure used for determining whether in a given case a particular act had or had not brought about the wrong against which the statute provided."

The court based its view that the statute was drawn in the light of the existing conception of the law of restraint of trade also upon the fact that the statute did not use the term in the strict technical sense which applied it to contracts by which one party voluntarily restricted his freedom to pursue a calling or business, but applied it

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That restraint of trade, as used in the act, prohibits combinations possessing an undue power over a line of business is indicated by numerous decisions.

In the Trans-Missouri Freight Association and Joint-Traffic Association cases[1] it was strongly urged that the combinations did not in fact restrain trade, because their rates were fair and no effort had been made to drive outsiders out of business. The court, however, held that the general elimination of competition in a field of business was in itself a restraint of trade, because the elimination of competition on a general scale normally results in higher prices and consequently a diminished volume of commerce. The court said in the Joint-Traffic Association case:

> The natural, direct, and immediate effect of competition is, however, to lower rates and to thereby increase the demand for commodities, the supplying of which increases commerce, and an agreement whose first and direct effect is to prevent this play of competition restrains instead of promoting trade and commerce.[2]

In *Addyston Pipe and Steel Co.* v. *United States* the court expressed its agreement with a *dictum* in Judge Taft's decision in the lower court holding that, irrespective of the reasonableness of the combination's prices, its power over prices constituted it a restraint of trade. Judge Taft said:

> It has been earnestly pressed upon us that the prices at which the cast-iron pipe was sold in "pay" territory were reasonable. A great many affidavits of purchasers of pipe in "pay" territory, all drawn by the same hand or from the same model, are produced, in which the affiants say that in their opinion the prices at which pipe has been sold by defendants have been reasonable. *We do not think the issue an important one, because, as already stated, we do not think that at common law there is any question of reasonableness open to the courts with reference to such a contract. Its tendency was certainly to give defendants the*

also to combinations which the court held were theoretically attempts to monopolize. In this the statute followed the decisions and indicated an intention of using the term in the sense understood by the common law. On this point the court said (p. 59): "That the context manifests that the statute was drawn in the light of the existing practical conception of the law of restraint of trade, because it groups as within that class, not only contracts which were in restraint of trade in the subjective sense, but all contracts or acts which theoretically were attempts to monopolize, yet which in practice had come to be considered as in restraint of trade in a broad sense."

[1] 166 U.S. 290 and 171 U.S. 505, respectively.

[2] 171 U.S. 577.

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power to charge unreasonable prices, had they chosen to do so. But if it were important, we should unhesitatingly find that the prices charged in the instances which were in evidence were unreasonable.[1]

In the Northern Securities case[2] the court held the combination of two parallel and competing railroads by means of a holding company to be a violation of the act, although there had been no increase of rates and no curtailment of service in any respect, on the ground that the restriction of competition between the companies was itself illegal. Mr. Justice Harlan, speaking for court, said:[3]

In all prior cases in this court the Anti-Trust act has been construed as forbidding any combination which by its necessary operation destroys or restricts free competition among those engaged in interstate commerce; in other words, that to destroy or restrict free competition in interstate commerce was to restrain such commerce.[4]

National Cotton Oil Company v. *Texas*,[5] which involved the validity under the Fourteenth Amendment of certain Texas anti-trust laws, contains a strong *dictum* on the significance of the mere power to affect prices under the Sherman act, which was quoted with approval by the Supreme Court in the Union Pacific case. Speaking of monopoly, the court said:

Its [monopoly's] dominant thought now is, to quote another, "the notion of exclusiveness or unity"; in other words, the suppression of competition by

[1] Quoted in the opinion of the Supreme Court, 175 U.S. 211 at pp. 237–38 (italics are mine).

[2] 193 U.S. 197. [3] 93 U.S. 197 at p. 337.

[4] There were four dissenting opinions, and Mr. Justice Brewer wrote an opinion concurring in the result of Mr. Justice Harlan's opinion, but expressing dissent from some of the conclusions. He expressed the opinion that, when no individual investment was involved, but there was a combination of several individuals separately owning stock in two competing railroads to place the control of both in a single corporation organized expressly for that purpose and as a mere instrumentality for the combination of the competing roads, the resulting combination was a restraint of trade by reason of the destruction of competition. He held, however, that the elimination of competition between two such roads as a result of common ownership by a single individual would not violate the act, the act being limited by power of each individual, protected by the Fifth Amendment, to manage his own property and to determine the place and manner of its investment. Corporations, not being endowed with the inalienable rights of natural persons, when used as mere instrumentalities to combine the property of different investors in competing roads, are not protected in the right to hold the property of competing enterprises by the Fifth Amendment.

[5] 197 U.S. 115 (1905).

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the unification of interest or management, or it may be through agreement and concert of action. And the purpose is so definitely the control of prices that monopoly has been defined to be "unified tactics with regard to prices." It is the power to control prices that makes it the concern of the law to prohibit or limit them. And this concern and the policy based on it has not only expression in the Texas statutes, it has expression in the statutes of other states and in a well-known national enactment. According to them, competition, not combination, should be the law of trade. If there is evil in this it is accepted as less than that which may result from the unification of interest, and the power that such unification gives. And that legislatures may so ordain this court has decided.[1]

The clearest and most emphatic expression of the Supreme Court's view of legality of acquisition of a dominating control over a field of business is found in the Union Pacific case. In spite of the clearness with which the case presents the issue, in spite of the clearness of the court's decision, and in spite, also, of the fact that that decision followed the Standard Oil and Tobacco decisions and represents, therefore, a definition of "the rule of reason," the case has been neglected by the lower courts in considering the point involved.

The case involved a combination of the Union Pacific and Southern Pacific into a single operating organization by the purchase by the Union Pacific of a 46 per cent interest in the Southern Pacific. The roads competed for business large in absolute amount, but small in proportion to their total business. The elimination of competition between the roads far from eliminated all competition at the points where the roads had competed. Not only did water competition exist, but there was also strong rail competition with the Atchison, Topeka & Santa Fe at Los Angeles and San Francisco and with the Northern Pacific at Portland. The combination had not raised rates, service had been substantially improved, and there was no charge of unfair competitive methods.

The court, however, held that the policy of the Sherman act was the maintenance of competition in its general sense, regardless of any beneficial effects produced by combinations substantially abridging competition, because the substantial abridgment of competition *tended* to higher rates and to lessened incentive for

[1] 197 U.S. 129.

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efficient service, and because of the power of large combinations to suppress independents. Defining the policy of the act, the court said:

> To preserve from undue restraint the free action of competition in interstate commerce was the purpose which controlled Congress in enacting this statute, and the courts should construe the law with a view to effecting the object of its enactment.[1]

The court stated the applicability of the act to the combination as follows:

> The consolidation of two great competing systems of railroad engaged in interstate commerce, by a transfer to one of a dominating stock interest in the other, creates a combination which restrains interstate commerce within the meaning of the statute, because, in destroying or greatly abridging the free operation of competition theretofore existing, it tends to higher rates. *United States* v. *Joint-Traffic Association, supra*, 577. It directly tends to less activity in furnishing the public with prompt and efficient service in carrying and handling freight and in carrying passengers, and in attention to, and prompt adjustment of, the demands of patrons for losses, and in these respects puts interstate commerce under restraint. Nor does it make any difference that rates for the time being may not be raised and much money be spent in improvements after the combination is effected. It is the scope of such combinations and their power to suppress or create monopoly which determines the applicability of the act.[2]

The opinion of the Supreme Court in the Union Pacific case was followed by the district court in the Harvester case,[3] in which a majority of the court, admitting that the practices of the combination toward its competitors and the public in the main had been fair, held it to violate the statute because it substantially limited competition in the field of business involved.

United States v. *Great Lakes Towing Co.*[4] contains a *dictum* to the effect that, in passing on the legality of combinations, not merely the actually realized effects, but also the probable effects, are to be taken into account.[5] The district court in the Corn Products

[1] 226 U.S. 87. [2] 226 U.S. 88. [3] 214 Fed. 987 (1914). [4] 208 Fed. 733.

[5] 208 Fed. 733 at p. 745: "Whatever may be the views of individual economists, under the federal statutory policy normal and healthy competition is the law of trade; and such evils as may result from such competition must be considered less than those liable to follow a complete unification of interests and the power such unification gives. The evil of unification lies in the temptation to higher rates and lessened regard for the public interests; *and the tendency to this evil must be recognized, even though not in a given case realized by experience*" (italics are mine).

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Refining case[1] expressed the opinion that the decisions indicated that the power of a combination over a line of commerce may condemn it independently of its practices, but the point was not presented for decision in the case.

It is interesting and important to note that in the most important recent case in which the Supreme Court sustained a combination—the St. Louis Terminal Railroad Association case[2]—the ground for sustaining the combination was that it tended to *promote* rather than to abridge competition. This case has been frequently quoted as authority for the proposition that mere power over the market does not condemn a combination, but the decision, as a matter of fact, was based upon peculiar facts in the case which caused the combination to promote rather than to hinder competition.

VII

Further light is thrown upon the meaning probably intended by Congress by "restraint of trade" by an examination of the administrative problems involved in the application of the conflicting concepts—the concept that restraint of trade means only actual impediments to the freedom to buy or sell or conduct one's business as one sees fit, and the concept that it includes the acquisition of a dominating power over the market by the combination of competitors.

If the actual impediment concept of restraint of trade is to be applied, the courts must have a practical test by which to determine whether the practices of a combination impose unreasonable restrictions upon the freedom of others. The principal point to be noted in this connection is that the raising of prices to an unreasonable level by a combination of competitors is well recognized as an unreasonable impediment to trade.[3] When a combination so dominates the market that it is substantially able to fix the market price, a rule restricting restraint of trade to definite impediments upon commerce puts in question the reasonableness of the prices

[1] 234 Fed. 964 at p. 1011.

[2] 224 U.S. 383.

[3] *Chattanooga Foundry and Pipe Works* v. *Atlanta*, 203 U.S. 390; *Thomsen* v. *Cayser*, 61 U.S.L. ed. 353 at p. 360.

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charged by the combination. In case the combination's practices toward its competitors have been fair, the reasonableness of the prices exacted by it may constitute the sole issue.

The problems involved in the determination of the reasonableness of the prices charged by a combination appear to have been overlooked by courts which have advocated the actual impediment concept of restraint of trade. In some cases the reasonableness of prices might be determined by comparing the combination's present prices with prices before the combination was formed, allowing for changes in wages and in the cost of materials. In most cases, however, the determination of the fairness of prices would necessitate the ascertainment of the cost of producing and marketing, for the prices before the formation of the combination would not be a satisfactory criterion of what is reasonable. These prices might be too low on account of cut-throat competition or faulty cost accounting or too high on account of a gentlemen's agreement. Changes in processes, in addition to changes in wages and material costs, introduce changes in cost. In the case of the consolidation of independent enterprises into a single operating organization the changes in process are likely to be particularly important.

The determination of the cost of production and marketing of the goods involves the ascertainment of the fair value of property used in producing them, of the rate of return to which the combination is entitled on this value, of the operating expenses during the period under consideration, and of the apportionment of overhead and operating expenses to the various products and to the various grades of each product. After the complicated principles by which the fair value of property is determined and in accordance with which overhead and current expense should be distributed to the various lines of product have been worked out, there remains the almost equally difficult task of collecting the financial and engineering data necessary to show what the costs in the particular case are. The courts are not fitted by training and experience to pass on these questions, and the judicial machinery is not organized adequately to deal with them.

The use of the power which a combination possesses over the market to force the public to accept inadequate service also is

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recognized as a restraint of trade. In addition to ascertaining the reasonableness of prices, therefore, the courts would also be required to pass on the adequacy of the service rendered by the combination. In many cases in which the inadequacy was flagrant the proof of it would be simple. In other cases the proof might be extremely difficult, and it might be necessary to determine fairly definitely what was the minimum of reasonably adequate service, before the adequacy of the service actually rendered could be ascertained. The questions which might arise with respect to the adequacy of service are numerous. They include such questions as whether a reasonably wide variety of goods is offered, whether deliveries are reasonably reliable and prompt and credit terms reasonably liberal, whether complaints receive proper attention, whether an adequate stock of repair parts is carried, whether proper expert assistance is rendered customers to aid them in setting up their apparatus, to instruct them in its operation, and to assist them in its repair. Many of these special services would involve special price problems. The question of adequacy of service would probably also include the adequacy of production facilities. The courts would be required to decide what constitutes an adequately sized plant in relation to the demand, what reserve capacity, if any, should be provided to carry the "peak load" of prosperous times.

The problems of prices and service which arise in application of a rule restricting restraint of trade to actual impediments on trade strongly indicate that Congress did not intend restraint of trade to be understood in this narrow sense. The problems are too technical. They demand specialized training and experience which courts do not have. They involve a detailed prying into the business of the combinations for which the judicial machinery is not adapted.

One reason why a rule confining restraint of trade to actual impediments upon trade is so strongly urged is the feeling that, if only acts of combinations rather than combinations themselves are illegal, the remedy will be confined to the enjoining of the acts and that the combinations will escape dissolution. This, however, is a false hope. As was pointed out above, it is impossible to prevent the charging of unreasonable prices by injunction. To a great

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extent, also, it is impossible to compel adequate service to the public by injunction. The only remedy against exorbitant prices and inadequate service which a court can administer in most cases is dissolution, and this will have to be resorted to under a rule restricting restraint of trade to actual impediments upon commerce, as well as under one which recognizes the mere power of combinations as a justification for dissolving them.

The rule which holds combinations illegal because of the mere power possessed over the market escapes the difficulties of the actual impediment concept because, under it, mere proof of the combination's power to dominate the market is sufficient. The rule is criticized, however, on the ground that a combination cannot tell what proportion of a line of business it may control. It would be possible for the court to rule that the control of more than a specified percentage of a field of business would be considered *prima facie* evidence of power to dominate the market, but there is little likelihood of the court committing itself on this point.[1]

The importance of this objection to the indefiniteness of the rule, however, has been exaggerated. No one knows better than the business man himself what proportion of the field of business he must control in order to dominate the market. No one knows better than he himself his own position in the market. It is a

[1] The application of a definite proportional test, too, would not be without difficulties. A combination might concentrate its business in certain sections or localities and by tacit consent of other firms be allowed the control of such markets. The application of a proportional test in such cases would involve the determination of what the market unit was in which the combine's proportion of the business must not exceed a given amount.

A similar problem would arise in cases in which commodities with different grades were involved. Between any two consecutive grades competition might exist. Between grades on the extremes, the best and poorest, competition might be substantially *nil*. If a combination confined its production to certain grades, the comparison of its production with the total production of all grades would obviously be unfair, for it would lead to an unduly low percentage figure indicating possibly no undue control, when, as a matter of fact, in certain grades the combination might possess a substantial control. To compare the combine's production with the total production of these identical grades, on the other hand, would exaggerate the combination's importance in the market. In a more or less arbitrary manner a decision would have to be made with respect to what part of the total production of the industry the combination was in active competition.

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subject of constant study for him. In view of the extreme reluctance of courts to dissolve efficient organizations, except when required beyond all doubt, there is little danger of overstepping the rule when the organizers of the combination have an honest intention of keeping within it.

A possible source of indefiniteness in a rule holding illegal the acquisition of undue control over a market by means of combination is raised by the question: When is control over the market acquired by means of combination of independent enterprises, and when by means of the normal growth of a single enterprise? Assume, for example, that an enterprise controls 70 per cent of a line of business, which is sufficient to enable it to raise prices. If this control was acquired by the consolidation of enterprises controlling 50 or 60 per cent of the business and subsequent growth, it would probably be regarded as a case of control acquired by combination and therefore held illegal. On the other hand, if several producers controlling not more than 10 or 15 per cent of a line of business united and by their skill and energy, without the absorption of any additional enterprises, eventually acquired 70 per cent of the business in the commodity, such an enterprise would probably be classed as an instance of expansion by normal growth, despite the combination at the outset. But where between these two extremes should be drawn the line which separates expansion by combination from expansion by normal growth?

VIII

The foregoing analysis indicates that combinations of competitors probably are illegal under the Sherman act when possessing power to dominate a field of business or possibly, also, when the likelihood is great that they will acquire a dominating control over a field of business. It seems, also, to be immaterial that the combination is not a mere price-fixing arrangement, but a consolidation of independent enterprises forming a superior operating organization and serving a legitimate business purpose. The Supreme Court clearly stated in the Standard Oil and Tobacco cases that the form of the combination was immaterial.[1] It has

[1] *Standard Oil Co.* v. *United States*, 221 U.S. 1 at p. 39; *United States* v. *American Tobacco Co.*, 221 U.S. 106 at p. 180.

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held, also, on a number of occasions that the law is its own measure of right and wrong and that the fact that a combination is justified by other criteria of reasonableness than those recognized by the statute is immaterial.[1] The essential question is: Does the combination bring about results which the statute forbids? If the results forbidden include the acquisition of a dominating control over the market by means of the combination of competitors, consolidations of competitors into a single operating organization creating great economies are within the statute, as well as mere price-fixing agreements.

From the economic standpoint this rule is open to severe criticism because it fails to distinguish the ever-increasing number of combinations which serve a legitimate business purpose from those which serve none. Each type is equally liable to dissolution under this rule. The same criticism applies, however, with only slightly less strength, to the rule which makes the legality of combinations depend upon their conduct. Dissolution under this rule does not mean that the combination serves no useful purpose, but that it has been guilty of wrongful practices. Highly useful combinations may be dissolved under this rule, as under the other, simply as a means of preventing probable future violations of the act.

From the legal and administrative standpoint, however, the rule which renders subject to dissolution all combinations possessing a dominating power over a field of business is superior, because it furnishes a broader basis for regulation of combinations. If the regulation relates simply to the practices of combinations, the regulation must be confined to such as Congress has authority to enact or authorize under the commerce clause as limited by the Fifth Amendment—that is, it must be regulation of commerce and it must not, according to the standards of the courts, unreasonably abridge the combination's rights of liberty and property.

[1] *United States* v. *Standard Sanitary Manufacturing Co.*, 226 U.S. 20 at p. 49; *United States* v. *Trans-Missouri Freight Association*, 166 U.S. 290 at p. 339; *United States* v. *Joint-Traffic Association*, 171 U.S. 505 at p. 577; *United States* v. *Northern Securities Co.*, 193 U.S. 197 at p. 339; *United States* v. *American Tobacco Co.*, 221 U.S. 106 at p. 179; *National Cotton Oil Co.* v. *Texas*, 197 U.S. 115 at p. 129; *United States* v. *Union Pacific R.R. Co.*, 226 U.S. 61 at p. 83; *Thomsen* v. *Cayser*, 61 U.S.L. ed. 353 at p. 359.

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If all combinations possessing control of a field of business are illegal and subject to dissolution, it is possible to give the Trade Commission power to pass on exemptions from the rule and to permit combinations shown to be in the interest of the public to be formed or to continue to exist on compliance with such conditions as the Trade Commission may deem expedient. These conditions are not limited by the commerce clause and the Fifth Amendment. The government may prescribe whatever conditions the combination is willing to accept as a condition of its license to continue business undissolved.

The situation is analogous to the authority possessed by states or municipalities over public utilities by virtue of the police power and of franchise provisions. The power to regulate under the police power is limited by the utility's property rights. The power to regulate under the franchise is limited only by the terms of the franchise.

By means of this broader power over combinations which it is possible to procure by agreement with the combination it should be possible to some extent to remove the twilight zones between what is and what is not permissible under the commerce clause and the Fifth Amendment. Power could be acquired to make regulations which could not be upheld as regulations of commerce, such as regulations pertaining to manufacturing operations and processes. Under the protection afforded by the Fifth Amendment the regulations of the regulating body must be "reasonable." In the case of methods of conducting a business there is often more than one "reasonable" method. If the method already used by the business is "reasonable," the courts are inclined to regard orders requiring the use of a different method as "unreasonable," in spite of the fact that the use of the new method may result in substantial advantage to the public at relatively slight inconvenience to the business. By agreement with the combination more exact and detailed control over its business may be acquired and wider power may be obtained to determine specifically the procedure which shall be followed. By this means the regulating body could acquire over the combination the authority necessary to keep pace with the constant changes in industrial and commercial processes and condi-

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tions. This is of particular importance in maintaining adequacy of service. The standard of service which the public is limited to demand by the Fifth Amendment is "reasonably adequate." The courts are inclined to accept the prevailing type of service as the test for reasonably adequate service. Not until a new and superior type of service has become the prevailing type do the courts adopt it as the minimum of reasonably adequate service. On account of the conservatism of the courts with respect to standards of service, it is desirable for the regulating body to have authority to compel the adherence to a higher standard than merely reasonably adequate service, and to be able to compel the use of the "most modern," "most approved," equipment, methods, and processes that are practical under the circumstances.[1]

Whichever concept of restraint of trade the courts adopt, it is evident that additional legislation is imperative. The courts are confronted with a dilemma in choosing between the two opposing concepts. If they hold that all combinations of competitors possessing a dominating control over the market are illegal, they destroy many combinations which serve a legitimate economic purpose. If they hold only such combinations illegal as impose unreasonable impediments upon the freedom of others to buy and sell and to conduct their business as they see fit, they adopt a rule which puts dissolution on a slightly less irrational basis than the broader rule, but which in most cases is extremely cumbersome, if not impossible, to administer and which is too narrow to form a satisfactory basis for the regulation of the combinations which it is not expedient to dissolve. If the courts adopt the broad concept of restraint of trade, therefore, legislation is needed to enable useful combinations to escape dissolution and to provide machinery for their regulation. If the narrow concept is adopted, in addition to the provision for the regulation of such combinations as serve a legitimate economic purpose, there is need to enact the broader

[1] Another case of where specific control over the business of combinations is desirable is in the control of technical research. Technical research is unquestionably the antidote for technical stagnation when competition is eliminated. When a combination abolishes competition, the regulating body should have authority to prevent technical stagnation by compelling the setting aside of definite sums for experiment and research.

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concept into law, in order to provide a simpler rule for dissolving the combinations which it is deemed desirable to dissolve and to furnish a broader basis for regulating those combinations which it is desired to permit.[1]

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[1] A question may be raised concerning the constitutionality of a statute declaring all combinations of competitors resulting in a substantial control of the market to be a crime or tort, irrespective of the acts of the combination. The question is whether the prohibition of all combinations possessing a dominating power over the market is an appropriate means of preventing undue restraint of trade. In view of the likelihood of great power being used oppressively, there seems no question that it is an appropriate means and it has been so held in many cases. The Joint-Traffic Association case, 171 U.S. 505 at pp. 566–70; *Addyston Pipe and Steel Co.* v. *United States*, 175 U.S. 221 at pp. 228–30; the Northern Securities Co. case, 193 U.S. 197 at p. 337, all uphold the Sherman act, interpreting it as penalizing the mere acquisition by combination of dominant power over trade. The most recent and most emphatic case on this point is *International Harvester Co.* v. *Missouri*, 234 U.S. 199, upholding a Missouri statute making illegal all combinations which tend to lessen "full and free competition," regardless of their effect upon others. These statutes are but one instance of the familiar practice of drawing the line of illegality before actual injury in order to prevent actual injury (cf. Freund: *Standards of American Legislation*, pp. 84–95, 221–22).

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SOME ADVANTAGES OF THE LOGARITHMIC SCALE IN STATISTICAL DIAGRAMS

Statisticians have long been aware that for some purposes of analysis and graphic representation the logarithmic scale has special advantages which the ordinary natural scale does not offer. But with that awareness they have mostly rested content. Comparatively few have worked with the logarithmic method and really come to know it in its applications. The logarithmic scale, it has been assumed, would be unintelligible save to experts. Because of its unfamiliarity it has been neglected; through neglect it remains unfamiliar, and thus a serviceable statistical tool lies virtually idle.

It is the thesis of this article that the logarithmic scale is too useful as a statistical auxiliary to be disregarded simply because it is not yet generally understood; and, further, that the best way to secure for it a more general understanding and appreciation is to use it intelligently at every appropriate opportunity. This is not by any means to say that the logarithmic scale should prevailingly replace the natural scale in ordinary graphic work. Often, however, where only one method is to be followed, the logarithmic construction is clearly superior. Even if such occasions are as yet comparatively infrequent, it is still true that figures drawn to the logarithmic scale will usually afford an informing contrast and supplement to diagrams in the more conventional form.

For demonstrating the characteristics of logarithmic diagrams such a contrast is quite the most promising plan. Mr. Bowley, in his brief but excellent discussion of logarithmic diagrams,[1] has recommended this procedure. "It would be useful," he remarks, "to offer several diagrams on both scales; for in many series of figures the differences exhibited by the two methods are very instructive." Mr. Bowley felt himself constrained by the limits of space to forego acting upon his own proposal, but the suggestion was good. In the following pages space is deliberately devoted to

[1] *Elements of Statistics*, pp. 188 ff.

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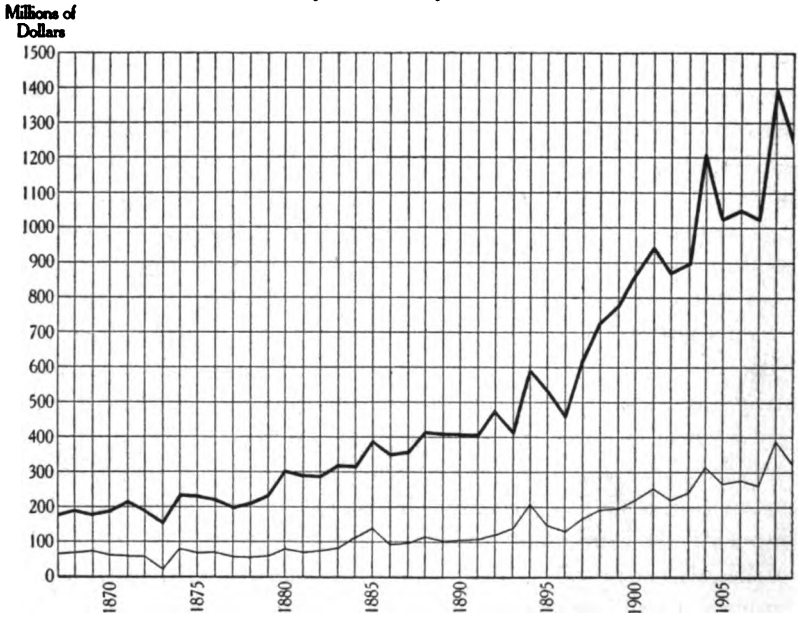
a comparative display of diagrams of the two kinds. The primary intention is to exemplify, not to innovate. There is no pretense of any important originality. The purpose of the article is simply

DIAGRAM I.—NET DEPOSITS (HEAVY LINE) AND RESERVES (LIGHT LINE) OF THE CLEARING-HOUSE BANKS OF NEW YORK CITY, ACCORDING TO THE 41ST WEEKLY REPORT (EARLY OCTOBER) IN EACH YEAR, 1867–1909

Natural Scale

Data (except for the year 1888) from *Statistics for the United States, 1867–1909*, compiled for the National Monetary Commission by A. Piatt Andrew



to make logarithmic diagrams a little less unfamiliar, and to let them speak for themselves on the basis of better acquaintance.[1]

The graphic method in statistics is primarily a device for presenting vividly the significant relations of phenomena. Each slope of a curve in an ordinary two-dimension statistical diagram is the

[1] This article was substantially completed some months before the appearance (in the *Publications of the American Statistical Association*, June, 1917) of Professor Irving Fisher's ingenious demonstrations of the "Ratio Chart," which it unfortunately overlaps. It had itself been proposed as a contribution to the *Publications* two years ago; but at that time the editor of the *Publications* was not prepared to reproduce the requisite number of diagrams.

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visible expression of some relationship. If the purpose of a particular statistical presentation is simply an accurate recording of separate details, a diagram is, of course, a poor substitute for plain numerical statements; but when the relative aspects of the data are to be emphasized the diagram comes into its own.

And yet, even within this sphere of its special excellence, graphic representation, in terms of the common, natural scale of uniform intervals, has very real limitations. Too frequently, though the problem is simple and the diagram is well done, the eye will fail to detect the precise nature of the relationship which the statistician seeks to present.

Some of the shortcomings of natural-scale representation are fairly illustrated by Diagram I. The upper and lower curves[1] of this figure show, respectively, the net deposits and the reserves of the New York Clearing-House banks in early October of each year from 1867 to 1909, inclusive. From the diagram in this form certain facts are indeed sufficiently clear. Both deposits and reserves increased markedly during the period under review. The increase of each, though on the whole progressive, has been subject to appreciable fluctuations; and the fluctuations of one curve are associated with synchronous and apparently similar fluctuations of the other.

[1] The term "curve," it must be noted, is used here in a loose sense. The data upon which Diagram I is based define only the points where the so-called curves cut the successive vertical ordinates. The straight lines connecting these points are quite arbitrary and do not at all necessarily represent actual intervening values of the phenomena plotted. They serve merely to link the given points together in such a way as roughly to suggest the general trend of increase or decrease during the interval between the recorded observations.

In some instances such arbitrary straight lines closely approximate the curve which would result if observations were made and plotted at very short intervals. This is probably the case in Diagram V. But in Diagram I the straight-line method of construction ignores the existence of a more or less characteristic annual cycle in the movement of bank deposits and reserves. In such cases as Diagram XV the method is almost wholly anomalous, since there the total tin production of an entire year is plotted at each ordinate, and any curve between the ordinates is therefore imaginary.

The construction of diagrams like Diagram I or Diagram XV is obviously inexact; but it follows a statistical tradition which unfortunately is almost rigidly established. From this tradition it has not seemed expedient to depart in the present article, lest the raising of a secondary issue should distract attention from the primary theme. It may be remarked, however, that the arbitrary straight line between two points has not in strictness the same meaning in a logarithmic diagram that it has in a diagram drawn to natural scale.

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The amount of deposits or of reserve in the early days of any particular October may be estimated by consulting the scale at the side of the diagram. The amount of increase or decrease of either item during a given year or term of years is not difficult to determine approximately. All this information, then, the ordinary scale gives adequately. Some of it would be less satisfactorily given by any other scale. But if we press our inquiries further and ask, on the basis of these early October statements, whether, for example, the expansion of deposits was *relatively* greater in the year after the crisis of 1907 than in the year after the crisis of 1873, or whether the contraction of deposits was relatively greater before 1873 than before 1896; if we try to compare the percentages of reserve held in the years before 1870 with the corresponding figures since 1895; or if we wish to know specifically what was the percentage of reserve in early October of 1905, deficiencies of the natural scale are revealed. (None of these questions, which concern relations rather than detached facts, is satisfactorily answered by the diagram.) If answers are forthcoming at all, it is only because, through the scales, one may roughly and inconveniently recover the numerical data from which the diagram was made. This, however, could have been more easily accomplished by ignoring the diagram altogether and consulting its data in the form of a table.

It is practicable, of course, to contrive a diagram, drawn to a natural scale, with the special purpose of bringing out some one fact or relation which in Diagram I has remained obscure. Thus the percentage of reserve of the New York banks could be plotted, year after year, as a separate curve. This curve, however, would in turn fail to show the absolute amounts of reserves and deposits. The difficulty is to devise a form of representation which shall show, directly and graphically, both relative and absolute magnitudes. A complete solution of this problem is hardly attainable, but logarithmic diagrams in certain cases go far toward meeting the want where the relative aspects of the phenomena are primarily to be emphasized.

The logarithmic scale may indeed be described as a scale of ratios. On it absolute distances measure relative magnitudes. The numbers which occur at equal intervals along a logarithmic

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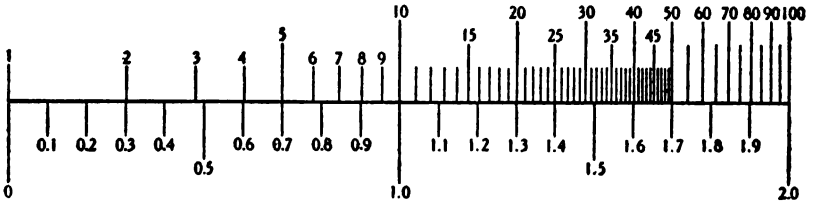
scale thus form not an arithmetic but a geometric progression; and consequently the same proportionate relation exists between any two numbers a given distance apart on a given logarithmic scale, regardless of their absolute magnitudes and regardless of their absolute differences. Conversely, the numbers 2 and 4 on a logarithmic scale are separated by the same distance as the numbers 500,000 and 1,000,000, for the simple and decisive reason that the larger number of each pair is double the smaller number.

The mathematical principle of the scale is suggested by Diagram II. Here the graduations above the horizontal line mark off the intervals of a logarithmic scale from 1 to 100. The feature of this scale which at once strikes the eye rather bewilderingly is that the interval between successive numbers is not constant, but

DIAGRAM II.—THE LOGARITHMIC SCALE FROM 1 TO 100



progressively narrows as the numbers grow larger. Closer scrutiny reveals the more significant and clarifying fact that the interval is constant between numbers which bear to each other a given ratio. Thus 1, 2, 4, 8, 16, 32 stand at equal distances apart; as do 1, 3, 9, 27, or 1, 5, 25, or 1, 10, 100. The uniform interval which separates the numbers of this last-named series—successive powers of 10—has been taken as the unit upon which is based the ordinary scale below the horizontal in the diagram. If, now, any number on the upper scale be regarded as a power of 10, it will be found that the corresponding reading of the lower scale gives the index of that power. This relation holds invariably; for not only do we find 10 (i.e., 10^1) opposite 1, 100 (i.e., 10^2) opposite 2, and 1 (i.e., 10^0) opposite 0, but the square root of 10 (i.e., $10^{\frac{1}{2}}$, or 3.1623) is opposite 0.5; the square root of 1000 (i.e., $10^{\frac{3}{2}}$, or 31.623) is opposite 1.5—and so on indefinitely, whatever the index of the power. In fact,

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the number at any point of the lower scale is the common logarithm of the number at the same point of the upper scale.[1]

If, now, it is desired to use the logarithmic scale in the construction of a statistical diagram, we may proceed in either of two ways. We may reduce the data to logarithmic terms, and then, using an ordinary natural scale, plot the logarithms of the given quantities instead of the quantities themselves. Or if we have at our disposal co-ordinate paper ruled at logarithmic intervals, like the intervals of the upper scale of Diagram II, we may work directly, without any reduction of the data, locating the points of the diagram quite mechanically by the graduations of the paper, and relying upon these graduations for the logarithmic character of the result.[2] The

[1] The system of logarithms which is in ordinary use expresses any given number as a certain power of 10. The logarithm of the given number indicates what power of 10 that number is. Thus the logarithm of 10 is 1; the logarithm of 100—i.e., of 10×10, or 10^2—is 2; the logarithm of 1000, or 10^3, is 3, and so on. A logarithm is in fact an exponent—the index of a power—and the derivation and uses of logarithms consequently follow the algebraic rules of exponents. In the case of a number which is not an even power of 10 it is possible to compute the logarithm in the form of a fractional exponent. For example, as the text implies, the logarithm of 31.623, the square root of 1000—i.e., $\sqrt{10^3}$ or $10^{\frac{3}{2}}$—is 1.50. By extending the principle of fractional exponents the logarithm of any assignable number may be approximately expressed.

The peculiar advantage of the logarithmic scale in statistical work is a consequence of the elementary logarithmic principle that the difference between the logarithms of two numbers is the logarithm of the ratio of the one number to the other. That is,

$$\log a - \log b = \log \frac{a}{b}.$$

Hence, whenever the ratio between two numbers a and b is the same as the ratio between two other numbers p and q, so that $\frac{a}{b} = \frac{p}{q}$, and $\log \frac{a}{b} = \log \frac{p}{q}$, it will follow that $\log a - \log b = \log p - \log q$. Plotted to a given natural scale, $\log a$ and $\log b$ would thus differ by the same interval as $\log p$ and $\log q$—the equality of these differences indicating the equality of the ratios $\frac{a}{b}$ and $\frac{p}{q}$. The device of plotting statistical quantities in terms of their logarithms is, then, simply an exploiting of the general principle that the absolute difference between two logarithms is a measure of the relative difference of the numbers to which they correspond.

[2] For an instance of tolerably elaborate logarithmic graduation see Diagram XII, on p. 828.

Suitable logarithmic co-ordinate paper is unfortunately not easily secured. Such logarithmic papers as are available are mostly designed for the use of engineers and are for one reason or another hardly satisfactory for general statistical use. The logarithmic diagrams which accompany this article have in the main been drawn on paper specially engraved for the statistical laboratory of the University of Chicago.

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two methods are entirely equivalent, as should be evident from Diagram II. Indeed it is often convenient to regard a diagram as constructed by both methods, and to supply for its more complete explanation a logarithmic scale of the natural numbers on one side, and a natural scale of their logarithms on the other.[1]

Before attempting a logarithmic presentation of the bank data of Diagram I, it will be well to consider, in artificially simplified cases, certain general properties of logarithmic diagrams which furnish the key to their interpretation.

Let us take for our first illustration the arbitrary example of Diagram III. Here an assumed phenomenon, which has a magnitude of 1 when it is first observed, increases to 5 in the course of a year and then, in the second year, falls off to $2\frac{1}{2}$. In the third year it again increases fivefold, to $12\frac{1}{2}$. In the fourth year it again declines by half, to $6\frac{1}{4}$. Thus alternately quintupled and cut in two, the phenomenon grows by perfectly regular oscillations. Diagram III, which is drawn to an ordinary natural scale, shows vividly the accelerated character of this increase, stated in absolute numbers; but precisely because it is a natural-scale diagram it fails to show at all obviously that the rate of relative rise and fall is the same for all the oscillations. The earlier waves of the curve, which are absolutely small, are made to seem in all respects comparatively insignificant.

Strikingly different is the effect of Diagram IV, in which the data of Diagram III are plotted to a logarithmic scale. Absolute magnitudes here can be determined only from the numbers of the scale: the graphic evidence of the diagram establishes the identity of the relative changes, step by step, for the whole serrate curve. Every ascent has the same vertical rise. That is, the indicated percentages of increase are uniform. Each decline has the same drop: the percentage of decrease shown by each is the same. (This equal relative significance of equal absolute distances is the essential characteristic of the logarithmic scale.)

Certain fairly obvious but important corollaries follow from this fundamental principle. Since the upstrokes of the curve in

[1] For an example of this treatment see Diagram IV on p. 812.

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DIAGRAM III.—ARBITRARY EXAMPLE OF A PHENOMENON INCREASING BY EQUAL RELATIVE OSCILLATIONS

Natural Scale

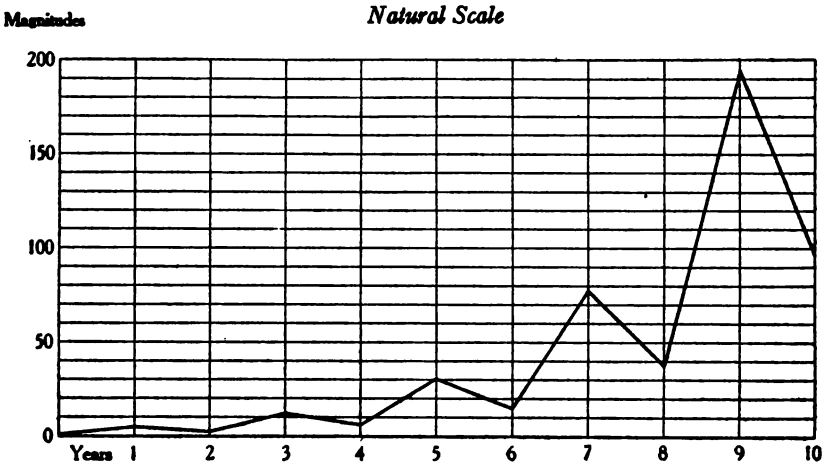

DIAGRAM IV.—ARBITRARY EXAMPLE OF A PHENOMENON INCREASING BY EQUAL RELATIVE OSCILLATIONS

Logarithmic Vertical Scale

Data of Diagram III

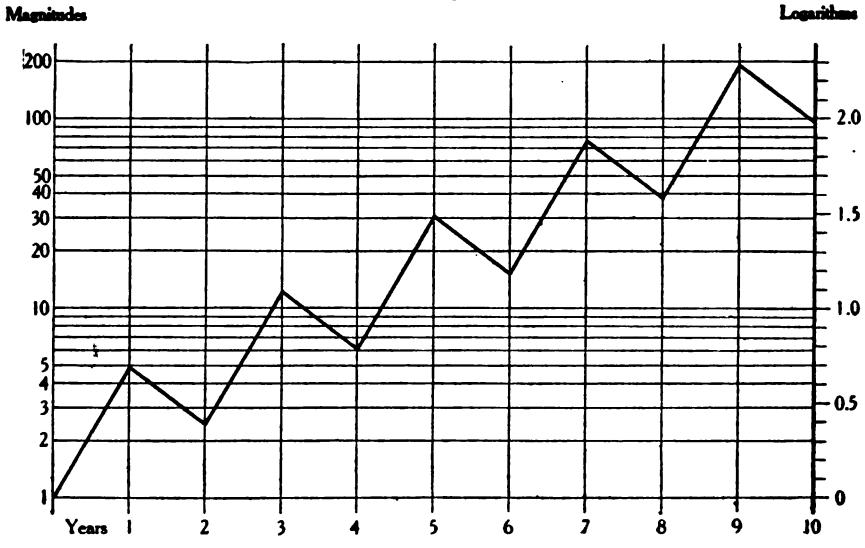

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Diagram IV are all straight lines rising by the same amount, and since each rise, occurring in the same period of time, is allotted in the diagram the same horizontal distance, it follows that the slope of the several upstrokes is the same. The downstrokes are similarly all of the same slope. Quite generally, where a curve is drawn to a logarithmic vertical scale and a natural horizontal scale,[1] equal slopes indicate equal rates of relative change. By extension of this rule it will be seen that a constant rate of increase is represented in a logarithmic curve by a constant slope—i.e., by a straight line; and that wherever in such a logarithmic diagram two curves run parallel, in the sense that the vertical distance between them remains unaltered,[2] the phenomena which they respectively represent maintain to each other a constant ratio, inasmuch as any change of the one is evidently coincident with a change of the other to the same relative extent.

These generalizations may be simply illustrated by the examples which follow.

In Diagram V, drawn to natural scale, the continuous curve traces the growth of the population of the United States, according to the decennial enumerations of the United States

[1] The rules here stated also apply, *mutatis mutandis*, to diagrams in which the horizontal scale is logarithmic and the vertical scale an ordinary scale. Such constructions are, however, unusual. Cf. below, pp. 833 ff.

[2] This qualification is necessary when the curves in question are not straight lines. Similar arcs of two concentric circles, for example, although in a sense parallel (i.e., equidistant at all points in terms of the normals to the curves), would not, in an ordinary logarithmic diagram, imply a constant ratio between the quantities plotted. On the other hand, curves which are parallel in the sense of the text, and which do therefore indicate a constant ratio between two variables, may not be parallel in appearance. This difficulty, illustrated by the accompanying figure, suggests that the effectiveness of logarithmic diagrams, when they are designed to test the proportionality of the data plotted, is much impaired if the contrasted curves are far from straight.

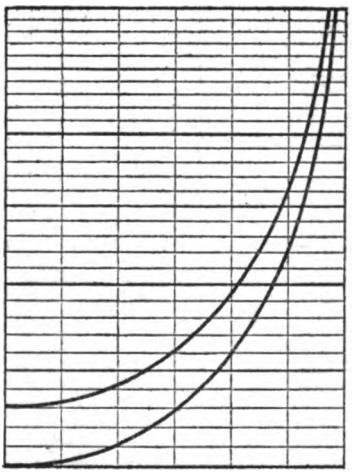

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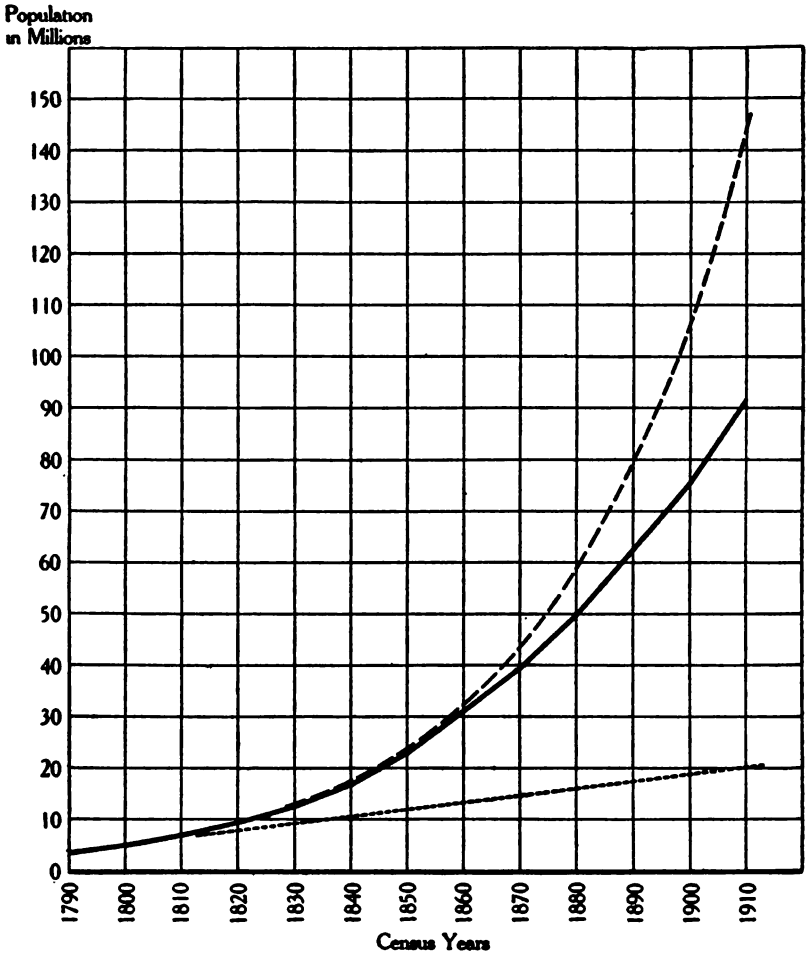
DIAGRAM V.—GROWTH OF THE POPULATION OF THE UNITED STATES, 1790–1910

The continuous line shows the actual increase according to the census returns. The broken and dotted lines show the growth which would have taken place if relative and absolute increase, respectively, had continued at the rate of the first decade.

Natural Scale

Data from 13th Census of the United States, I, 24. The corrected estimate for 1870 has been taken instead of the original enumeration



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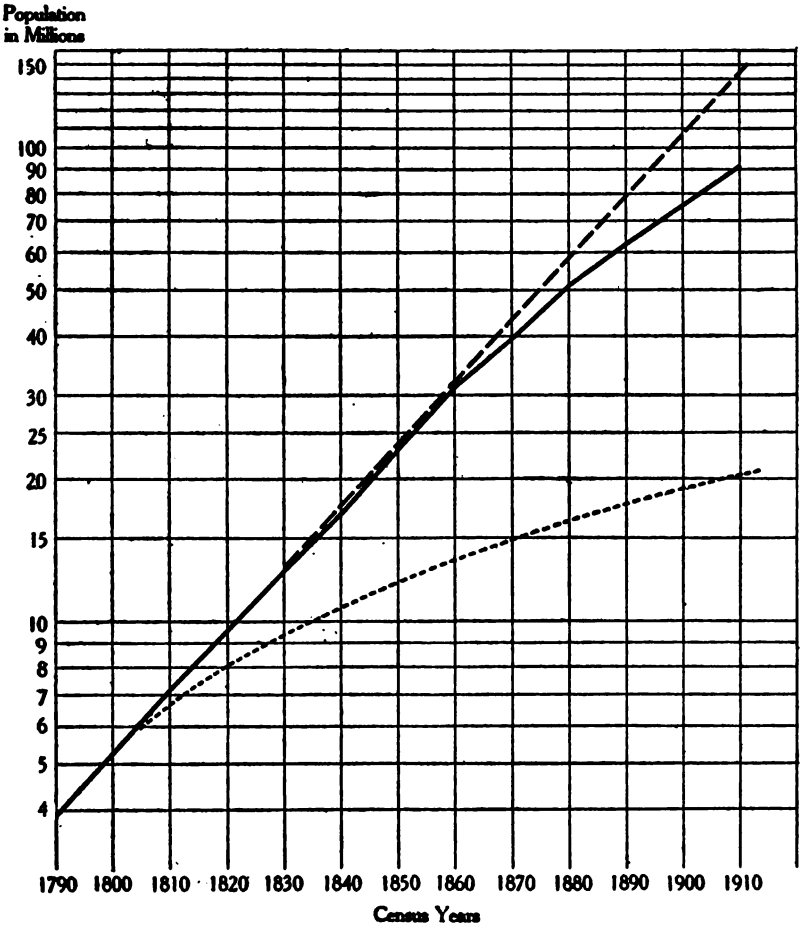
Census,[1] from 1790 to 1910, inclusive. The broken line, uppermost in the diagram, shows what the growth of population would have been

DIAGRAM VI.—GROWTH OF THE POPULATION OF THE UNITED STATES, 1790–1910

Logarithmic Vertical Scale

Data and explanations as in Diagram V



[1] For the population in 1870 the revised estimate of 39.8 millions has been accepted in preference to the original enumeration of 38.6 millions. (Cf. *Eleventh Census*, "Population," Part I, xi, xii.) No attempt has been made to indicate in the diagram the fact that not all intercensal intervals have been of precisely ten years.

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if the rate of relative increase observed between 1790 and 1800—35.1 per cent for the decade—had persisted without change since that time. The dotted line at the bottom of the figure shows what the growth would have been if the absolute increase of population in each decade since 1800 had been the same as the increase—1,379,269 persons—from 1790 to 1800. In other words, these two additional curves represent respectively geometric and arithmetic progressions based on the observed increase in the first intercensal period. It is to be noted that in a natural-scale construction the curve of arithmetic progression is a straight line.

In Diagram VI, drawn to a logarithmic scale, the continuous line, the broken line, and the dotted line represent each the same data as in Diagram V. But here the character of the curves is significantly different. The dotted arithmetic-progression curve, recording a constantly diminishing ratio of increase, falls away in this figure more and more toward the horizontal. And here it is the geometric progression which appears as a straight line, its constant slope denoting a constant rate of increase—i.e., the same relative increase in every equal period of time.

The growth of funds invested at compound interest affords another instance of geometric increase and therefore another example of a straight-line curve if a diagram is drawn to a logarithmic scale. The slope of the curve here depends upon the rate of interest and the interval between dates at which the interest is regularly compounded; but for a given rate and interval it is fixed and constant. Hence a logarithmic chart equivalent to a compound-interest table may very readily be constructed. Diagram VII is such a chart. In it a single straight line suffices to indicate the amount to which an initial sum of $100, compounded semi-annually at a given rate, will have increased on any compounding date included in the diagram.[1] The 4 per cent line is steeper than the 3 per cent line; the 5 and 6 per cent lines are successively

[1] The period of time covered by such a chart is of course in principle unlimited, for the lines will continue with their same specific slopes however far the diagram may be extended.

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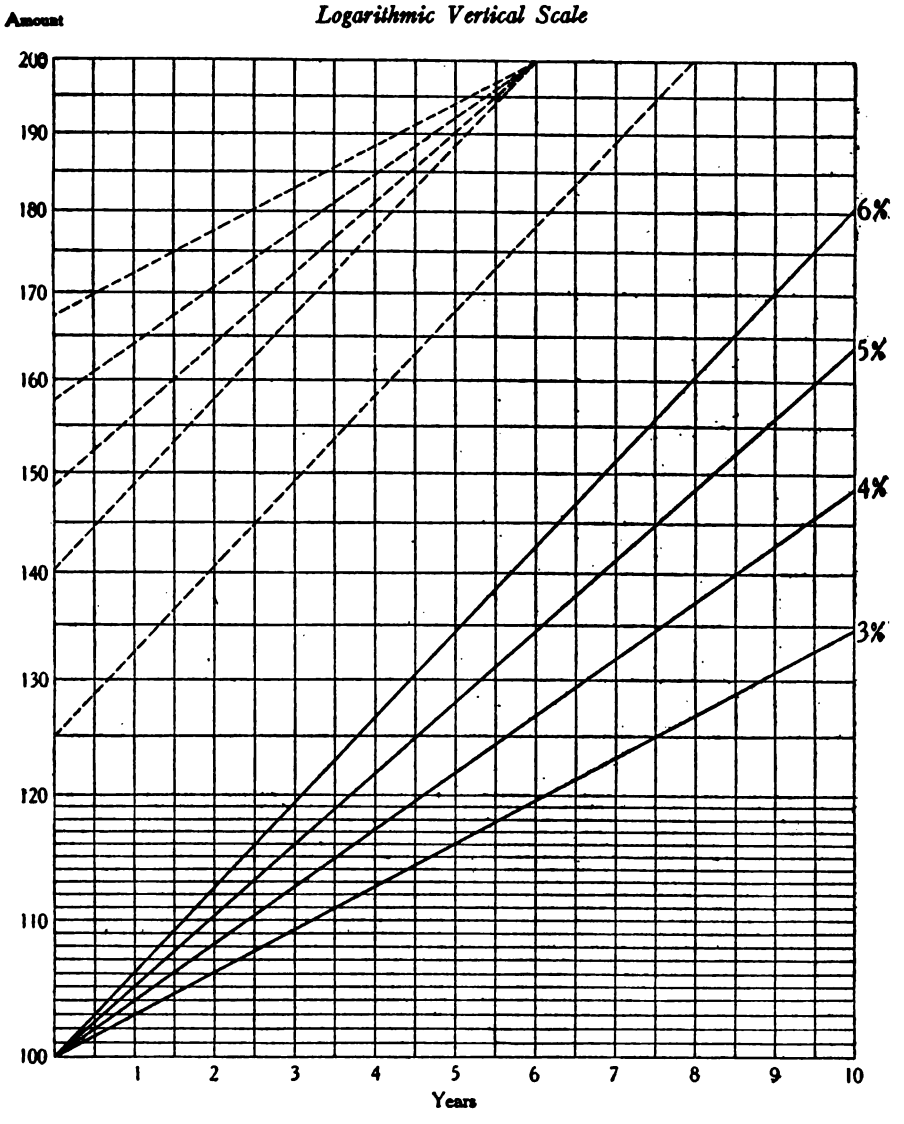
steeper still; but all are straight, and for each, when the scales of the diagram are once determined, the slope is fixed and characteristic.

DIAGRAM VII.—COMPOUND-INTEREST CHART (SEMIANNUAL COMPOUNDING)



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The same diagram serves also to illustrate another property of logarithmic diagrams that has already been mentioned. The broken line across the middle of the figure has been drawn to show the increase of $125, compounded semiannually at 6 per cent. It is at once apparent that this line parallels the continuous line of the increase of $100 at the same rate. The reason for the parallelism is tolerably patent. Each of the sums, $100 and $125, increases every six months by 3 per cent of its accumulated amount. That is, each sum is semiannually multiplied by 1.03. In the diagram, therefore, each of the two lines must rise, from one ordinate to the next, by the fixed vertical distance which, on the logarithmic scale, corresponds to the ratio 1.03:1.00. This, of course, insures that both rise alike. Or it may rather be argued that since original sums in the proportion of 1.25 to 1 are here assumed to be compounded at the same rate and the same interval, the cumulative results will be at any subsequent time in the same proportion of 1.25 to 1. The vertical distance between the two curves on any ordinate must therefore express the ratio 1.25:1.00, and hence, since a given ratio always corresponds to the same absolute interval on a logarithmic scale, the curves must be always at the same distance apart and therefore parallel. It follows that if a point be taken on the initial ordinate of this diagram, opposite the value $125 of the vertical scale, the straight line drawn through that point parallel to the original 6 per cent curve will represent the compound increase of $125 at 6 per cent. Similarly, to find the increase of any capital sum at any rate of compound interest, one has only to draw a straight line starting at the height which denotes the given sum and running parallel to a standard curve for the given rate of interest. In Diagram VII this principle has a somewhat different application. Through the point representing a sum of $200 at the end of 6 years have been drawn broken lines parallel to the standard curves showing respectively 3 per cent, 4 per cent, 5 per cent, and 6 per cent increase. These several broken lines cut the initial ordinate at heights which, read in terms of the vertical scale, show what amount of money, compounded semiannually at each respective rate of interest, would amount to $200 after 6 years.

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If logarithmic diagrams thus simply indicate the results of compound interest, they will with equal simplicity lend themselves to the elucidation of problems of depreciation when it is assumed that annual depreciation is a fixed percentage of the residual value of the asset at the beginning of the year. Depreciation thus defined is "straight-line" depreciation according to the logarithmic scale, just as depreciation by equal annual deductions is "straight-line" depreciation in the terminology of natural-scale graphics.

In principle the logarithmic method would serve as well to interpret observed facts of depreciation as to apply the fixed-percentage hypothesis. If the facts could be plotted in logarithmic charts the slopes of the curves would disclose the real rates of depreciation. Since, however, the treatment of depreciation in accounting is usually based on more or less arbitrary assumptions rather than on actual appraisals, it will probably be more interesting in the present connection to consider a somewhat analogous case where data are available.

Diagrams VIII and IX present in graphic form data from the "Life-Table for Native White Males in the Original Registration States," computed under the direction of Professor Glover by the Bureau of the Census. The height of the curve at any ordinate in these figures shows how many of 100,000 born survive to the specified age. The drop of the curve from one age to the next thus reveals the mortality between the two ages. But the sense in which these slopes indicate mortality is quite different for the two diagrams. In the natural-scale diagram (Diagram VIII) the descent of the curve expresses the number of deaths in a year among the survivors to a given age. This is not the usual way of stating death-rates; nor is it a convenient method, since the absolute number of deaths is a joint resultant of two factors which might better be considered separately—the probability of death at the specified age, and the number of persons at that age and subject to that hazard. We are ordinarily more concerned with the probability alone, or, which is much the same thing, with the proportion of those persons of given age who die in the course of a year. Precisely this relative mortality rate determines the slope of the curve in the logarithmic figure (Diagram IX), for here, as always, a given

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DIAGRAM VIII.—MORTALITY AND SURVIVAL OF NATIVE WHITE MALES IN THE ORIGINAL REGISTRATION STATES OF THE UNITED STATES, 1910

Natural Scale

Data from *United States Life Tables, 1910*, pp. 30–31

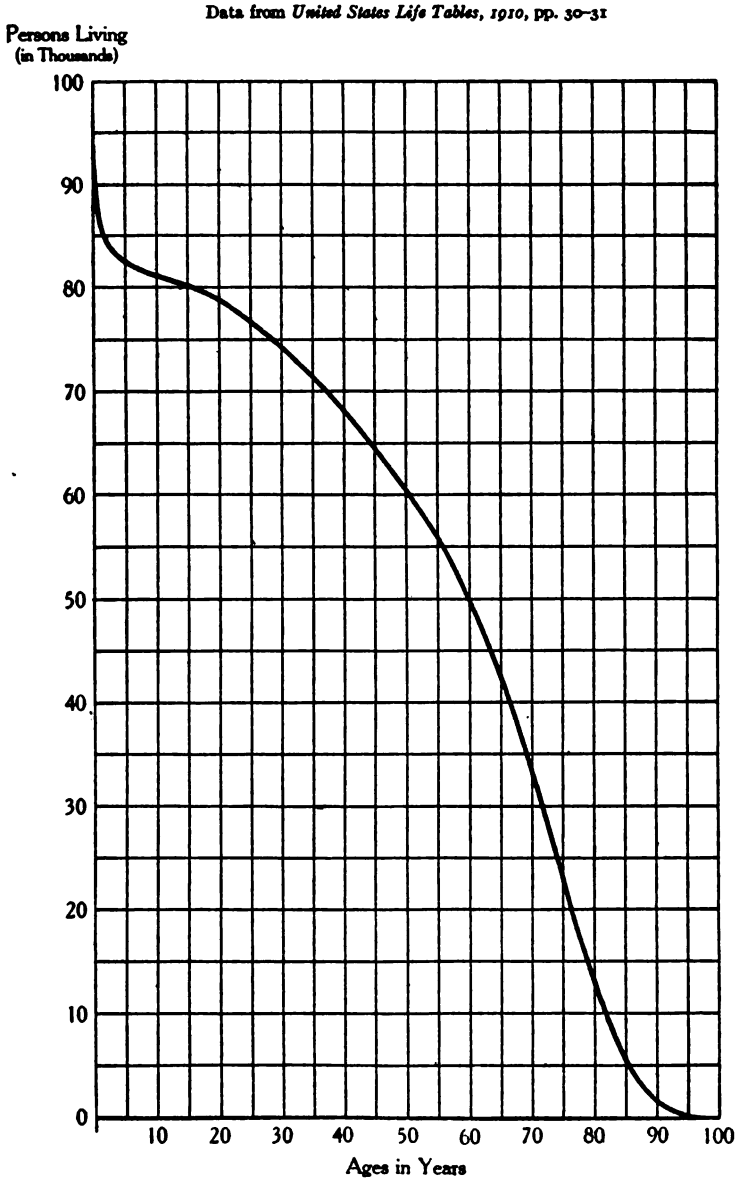

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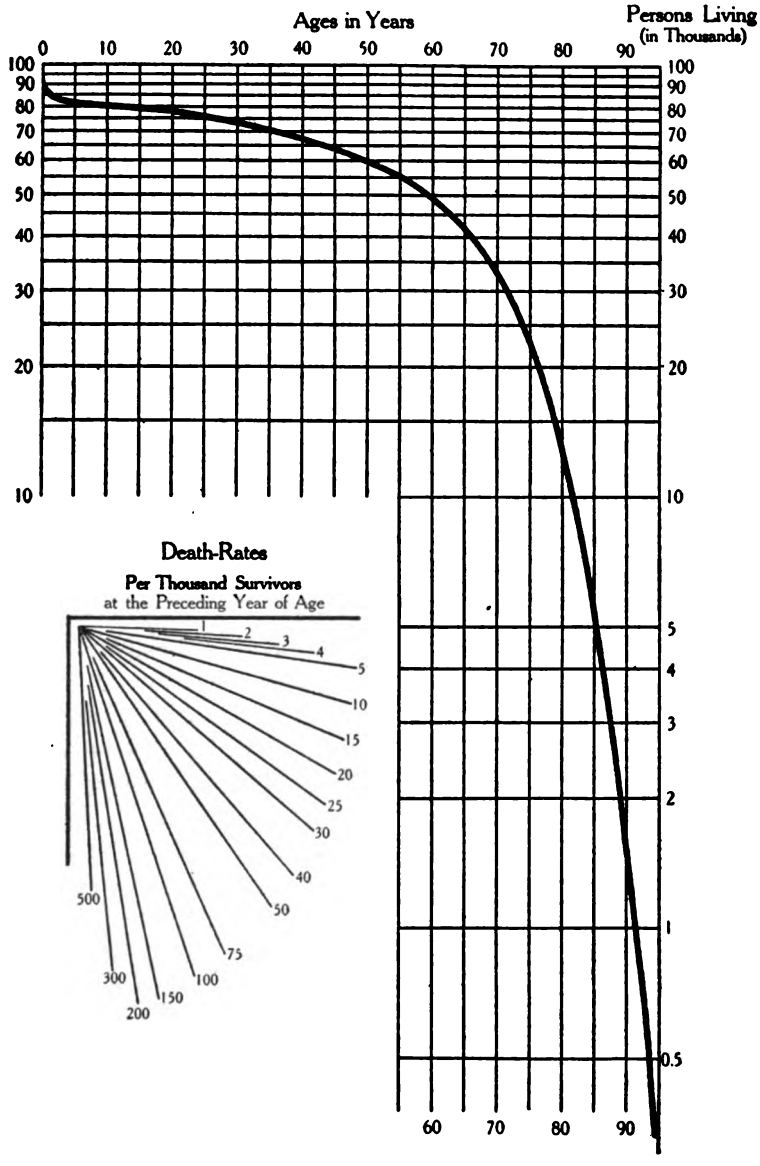
DIAGRAM IX.—MORTALITY AND SURVIVAL OF NATIVE WHITE MALES IN THE ORIGINAL REGISTRATION STATES OF THE UNITED STATES, 1910

Logarithmic Vertical Scale

Data of Diagram VIII



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distance on the logarithmic scale denotes a certain proportion of change. Hence the more steeply the logarithmic curve descends, the higher is the relative mortality which it indicates. Hence, too, it is possible to provide a key to the diagram in the form of standard sample slopes and corresponding numerical death-rates, which hold true for all parts of the curve. With their aid, even in so small a figure, it can be shown that the high rate of mortality prevailing in the first year of life, taken as a whole,[1] is exceeded by the mortality of men over eighty—a fact which would remain doubtful in Diagram VIII, where the effect of the infant mortality rate is exaggerated because of the great number of individuals under consideration, and where, on account of the attenuated population at advanced ages, even the extreme mortality of the very old results in absolutely few deaths and thus in a comparatively inconspicuous descent of the curve.

Diagram IX incidentally reveals a characteristic of logarithmic diagrams which the previous figures have not brought out. The descending curve is arbitrarily cut off at age 95, leaving 330 survivors of the original 100,000. To continue the curve to age 100, thereby accounting for all but 27 survivors, would necessitate prolonging the vertical dimension of the diagram by nearly one-half, for the relative reduction of the number of survivors is rather more in the five years from 95 to 100 than in the first eighty-three years of life. To carry the curve to the point where no one survives is impossible. The logarithmic scale has no zero. Extending a logarithmic scale to zero is equivalent to reducing a finite number to zero by successive divisions, and neither task can be accomplished short of infinity. The impossibility of completing the logarithmic representation of a life-table is of identical nature with the impossibility of completely amortizing an original sum by writing off each year a fixed proportion of the remaining amount. Either process can be carried on until the residual value, or the number of survivors, as the case may be, is reduced to any assigned quantity

[1] The mortality of the first month or two is, of course, relatively much higher than the mortality of the first year as a whole. To this fact is due the marked concavity of the curve at the outset. A diagonal straight line, substituted for the curve from age 0 to age 1, would by its slope show the first-year mortality referred to in the text.

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greater than zero; but neither can be continued to the point of extinction.[1]

Since logarithmic scales have no zero, logarithmic diagrams can have no base-line at zero. Indeed, they have no base-line at all; or, rather, every value of the logarithmic scale is as much a base-value as any other. This follows from the cardinal principle already repeatedly stated, that the same absolute interval stands for the same ratio of magnitudes at any and every part of a given logarithmic scale. It obviously constitutes an essential distinction between logarithmic and natural-scale diagrams. In a natural-scale diagram the importance of showing the base-line at zero of the vertical scale can hardly be urged too strongly. If this base-line be omitted, as it often is in unintelligent work, proper visual estimation of relative magnitudes is made impossible. Such omissions in complex natural-scale diagrams involving more than one base-line lead to extreme confusion and fallacy. In logarithmic diagrams fallacious effects of this particular sort are impossible; but any suggestion of a specific base-line may prove disconcerting to those unfamiliar with the logarithmic scale and may cause misconception of its character.[2]

The principles which have thus far been developed may now be recapitulated:

Throughout a given diagram, and regardless of the absolute magnitudes concerned:

(1) a given distance between any two points, measured along a logarithmic scale, indicates in every case the same ratio between the two magnitudes which the positions of the points represent;

[1] This same principle is brought out in another way by Diagram XX and the discussion on pp. 837–38.

[2] For this reason Mr. Willard C. Brinton (cf. *Graphic Methods for Presenting Facts*, p. 362) and the Joint Committee on Standards for Graphic Presentation seem ill-advised in proposing that the bottom line and the top line of every logarithmic chart should mark some power of 10 on the logarithmic scale. Mr. Bowley's authority (*Elements of Statistics*, p. 190) and the logic of the method are both against them. If for any reason it is felt to be important that the logarithmic scale should start with a power of 10, that objective may be attained, as in Diagram X, p. 825, without the necessity of a base-line. But in all logarithmic diagrams the absolute numbers of the scale are quite subordinate in importance, and should not be emphasized in such a way as to mask the essential properties of the scale as a measure of relations.

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(2) when changing magnitudes are plotted to a vertical logarithmic scale, and unit intervals of time are plotted to a horizontal natural scale,

(*a*) the slope of a curve is always an index of the rate of relative change;

(*b*) a straight line represents a constant rate of relative change; and, conversely, a constant rate of relative change is always represented by a straight line;

(*c*) where the vertical distance between two curves is constant the variables which they respectively represent maintain always the same proportion one to the other; and, conversely, two variables constantly in the same proportion are always represented by two curves at a fixed vertical interval.

The logarithmic scale admits of no zero, and in terms of a logarithmic scale no base-line should ordinarily be indicated.

With these general principles in mind we may now consider Diagram X, in which the bank statistics of Diagram I are plotted to a logarithmic scale. The questions which Diagram I failed to answer[1] find here a ready solution, and incidentally illustrate certain useful devices for the interpretation of logarithmic diagrams in general.

The relative expansion of deposits, evidenced by the absolute rise of the upper curve in Diagram X, was plainly greater in the year following October, 1873, than in the year following October, 1907. How great it was in either year may be determined with the aid of the percentage scale of increase at the right of the main figure. This scale, it is to be noted, holds good for vertical measurements at all parts of the diagram, since its logarithmic intervals make it a scale of ratios, quite independent of absolute magnitudes. The vertical rise of the deposit curve following 1873 shows by the scale an increase of approximately 50 per cent. The rise after 1907, similarly measured, is some 38 per cent.

Relative decreases of deposits can be tested in a manner quite analogous by the logarithmic scale of percentage decrease. Here,

[1] Cf. p. 808, above.

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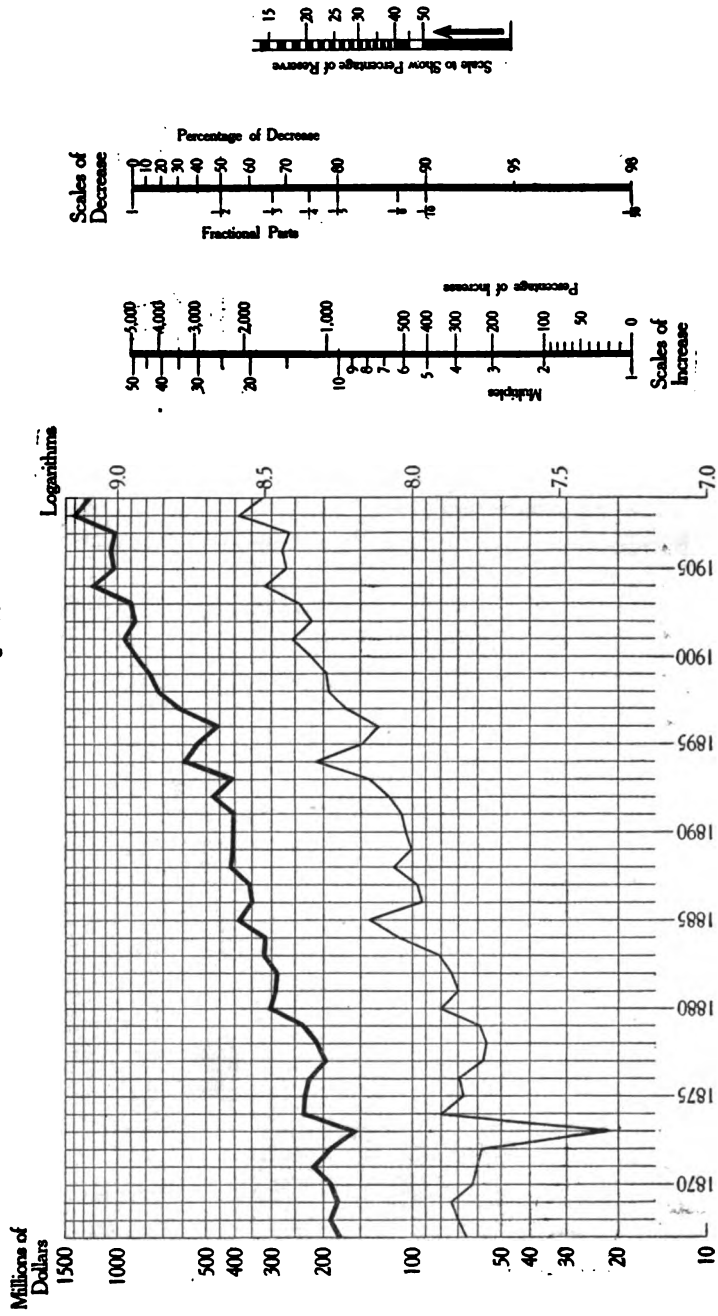

DIAGRAM X.—NET DEPOSITS (HEAVY LINE) AND RESERVES (LIGHT LINE) OF THE CLEARING-HOUSE BANKS OF NEW YORK CITY, ACCORDING TO THE 41ST WEEKLY REPORT (EARLY OCTOBER) IN EACH YEAR, 1867–1909

Logarithmic Vertical Scale

Data of Diagram I

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for convenience, the scale reads from the top downward, rather than up from the bottom, as in the scale of increase. The contraction of deposits from October, 1871, to October, 1873, as measured by the decrease scale, was about 27 per cent—appreciably greater than the contraction of some 22 per cent during the two years preceding October, 1896.

The proportion of reserve to deposits at any given date is obviously to be determined from Diagram X by measuring the appropriate vertical distance between the reserve curve and the deposit curve. For this purpose one might use the scales designed to measure increase and decrease. Thus, in October, 1905, deposits were not quite four times as great as reserves, according to the multiple scale. Interpreted by the scales of decrease, reserves were equivalent to slightly more than a quarter of the deposits, or were some 74 per cent less than the deposits. None of these statements, however, expresses reserves in the conventional way as a percentage of deposits. For convenience, therefore, a special inverse logarithmic scale is provided at the extreme right of the figure.[1] If a given vertical interval between the reserve curve and the deposit curve is laid off on this scale, from the bottom upward, the reading of the inverse scale states the reserve directly as a percentage of deposits. In October, 1905, it thus appears that the reserve stood at 26 per cent. The rough parallelism of the two curves throughout their whole course shows that the percentage of reserve has not greatly changed. Nevertheless, it is tolerably clear that the reserves held in early October were rather larger before 1870 than since 1895; for in the former period the curves are nearer together. The last of the questions which Diagram I left unsettled thus finds its answer in Diagram X.

The inverse percentage scale introduced in Diagram X is so serviceable a device as to justify further illustrations of its use. In Diagram XI it permits reading dutiable merchandise imports as a percentage of total imports of merchandise; and, when employed to measure the vertical distance between the customs curve and one of the curves of imports, presents directly the average ad valorem rate of duty for any year, reckoned, as the case may be, on

[1] This scale is, of course, simply a scale of the reciprocals of the numbers which would appear at the corresponding points on the logarithmic scale of multiples.

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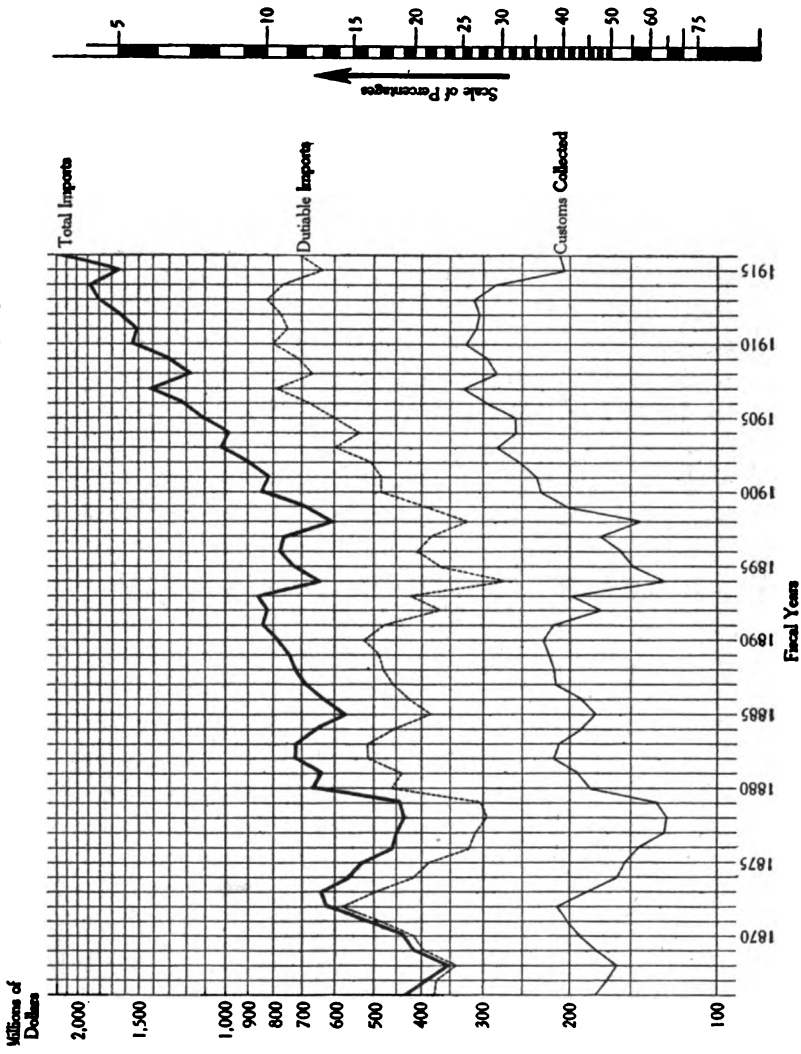

DIAGRAM XI.—TOTAL MERCHANDISE IMPORTS, DUTIABLE MERCHANDISE IMPORTS, AND CUSTOMS COLLECTED, FOR THE UNITED STATES, IN EACH FISCAL YEAR, 1866–1916

Logarithmic Vertical Scale

Data from the *Statistical Abstract of the United States for 1916*, p. 683

imports as a whole or on dutiable imports only. In Diagram XII it serves to translate into percentages of total ordinary revenue the annual receipts from customs and from internal revenues, respectively. Diagram XIII is a more extreme example of its possibilities. Here the scale, in percentages or in the per-thousand equivalents, not only interprets as a general death-rate the interval

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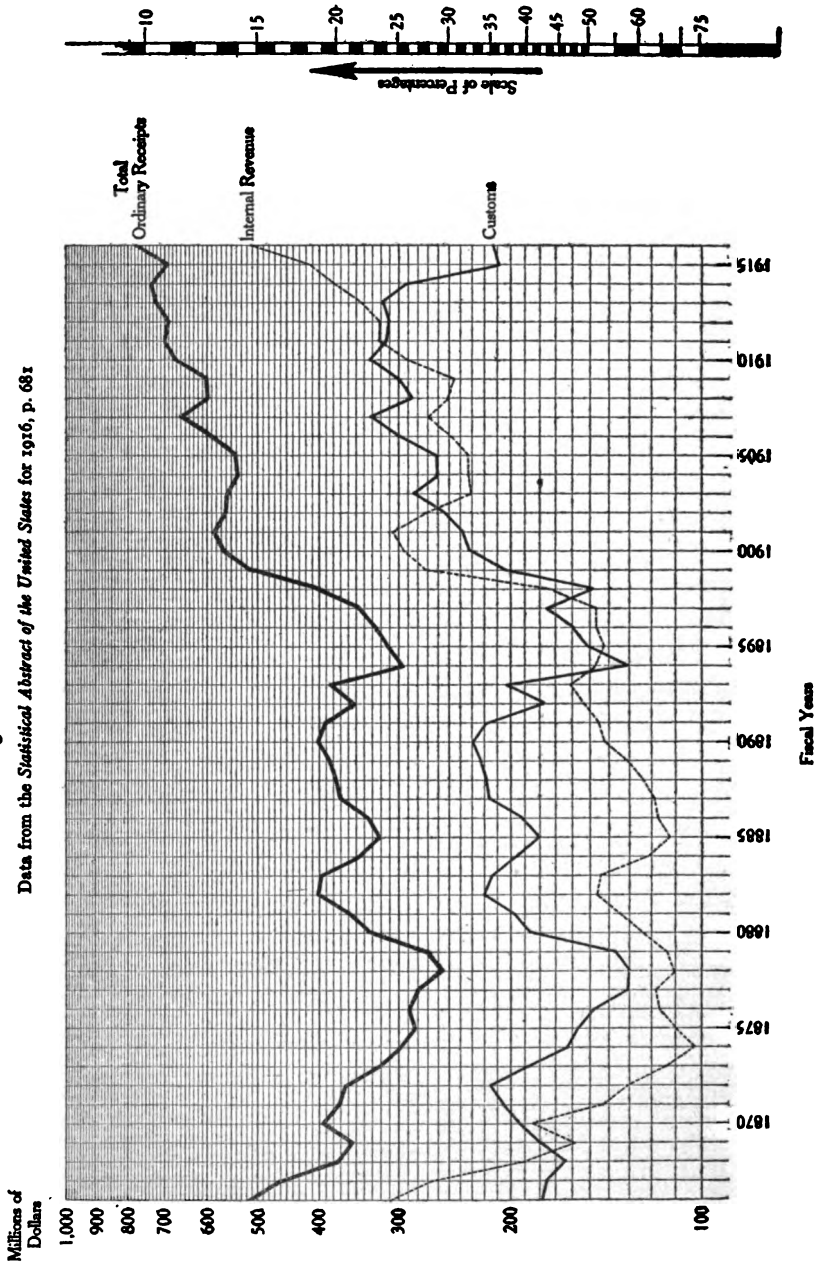
DIAGRAM XII.—TOTAL ORDINARY RECEIPTS OF THE UNITED STATES TREASURY IN EACH FISCAL YEAR, 1866–1916, WITH THE RECEIPTS FROM INTERNAL REVENUE AND FROM CUSTOMS (INCLUDING THE TONNAGE TAX)

Logarithmic Vertical Scale

Data from the *Statistical Abstract of the United States* for 1916, p. 681



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between the total deaths curve and the curve of population, but makes possible, by analogous measurements, the determination of death-rates for each specified disease, and the expression of the deaths from each disease as a percentage of all deaths. The noteworthy feature of this illustration is the extreme range of magnitudes in the data presented. The estimated number of persons in 1914 is nearly two thousand times as great as the number of deaths from cancer in 1900. The inclusion of such diverse numbers in one diagram has necessitated a rather severe compression of the vertical scale, with the result that in a diagram of convenient breadth the curves are flatter and less vigorous than would be desirable. But, if the logarithmic method is taxed by the demands of this problem, the natural-scale method fails outright, as is revealed by Diagram XIV. The population curve is here clear enough;[1] but the curve of total deaths is abased into almost featureless insignificance. As for the curves of deaths from special diseases, they never emerge into visibility, but lie blurred in the base-line. The highest point on the highest of these curves would be but 0.006 of an inch above the zero of the scale.

Thus another merit of no slight importance is to be recorded for the logarithmic scale: it is far superior to the natural scale for effecting comparisons when very small and very large quantities must be taken into account concurrently. Nor is this superiority manifest only in such figures as Diagram XIII. Whenever a historical curve records extreme growth, the same advantage is found. It is not necessary to dwarf the small beginnings in order to keep the later development within manageable dimensions. A study of Diagrams III and IV will illustrate this point. More striking illustration is offered in Diagrams XV and XVI. The production of tinplate in 1891 and the years immediately following was so small that the ordinary diagram (Diagram XV) leaves inconspicuous the extremely rapid rate of progress in output during those first years. The logarithmic diagram (Diagram XVI) quite reverses the emphasis. Plainly, the recent increase has been far from proportionate to the exuberant growth of the infant industry.

[1] It gives, in fact, interesting proof of the basis upon which the Bureau of the Census estimates the population in intercensal years. The curve is a straight line. Plainly, therefore, the population is assumed to have increased annually since 1900 by one-tenth of the total increase for the intercensal decade 1900–1910.

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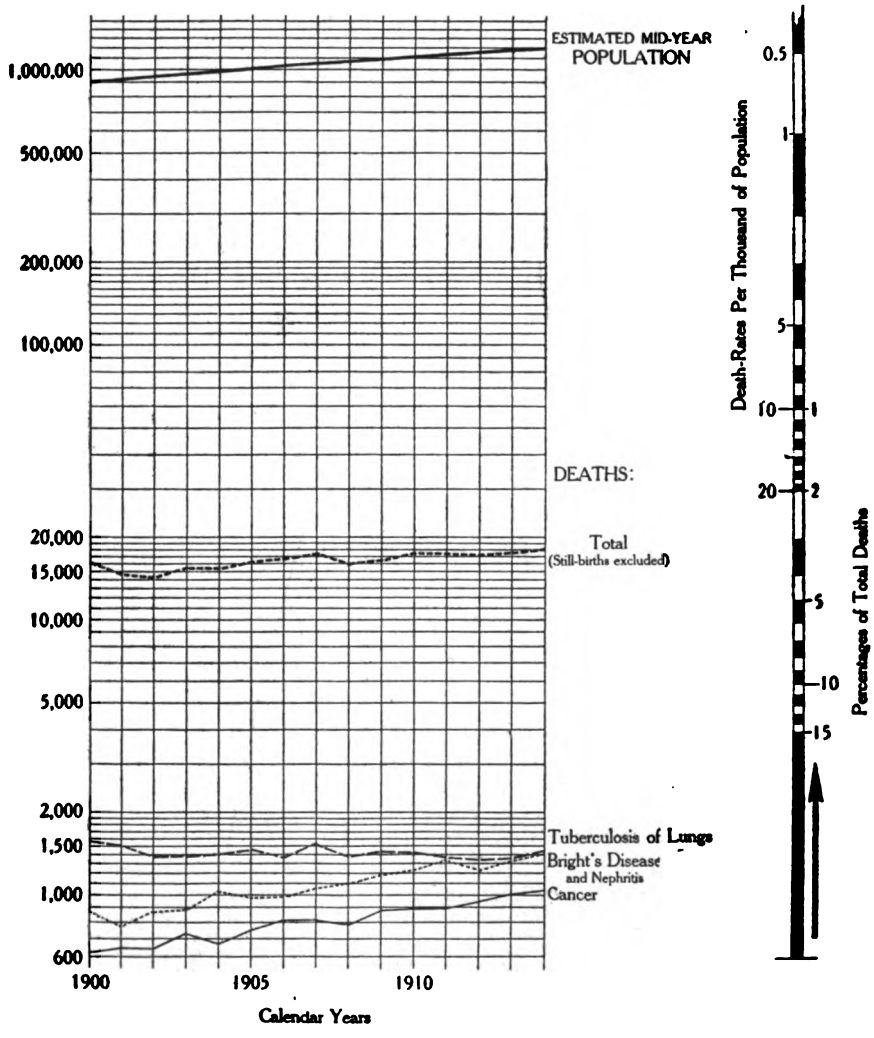
DIAGRAM XIII.—ESTIMATED POPULATION, TOTAL DEATHS, AND DEATHS FROM CERTAIN SPECIFIED DISEASES, IN CONNECTICUT, FOR EACH YEAR, 1900–1914

Logarithmic Vertical Scale

Data from Mortality Reports of the United States Bureau of the Census



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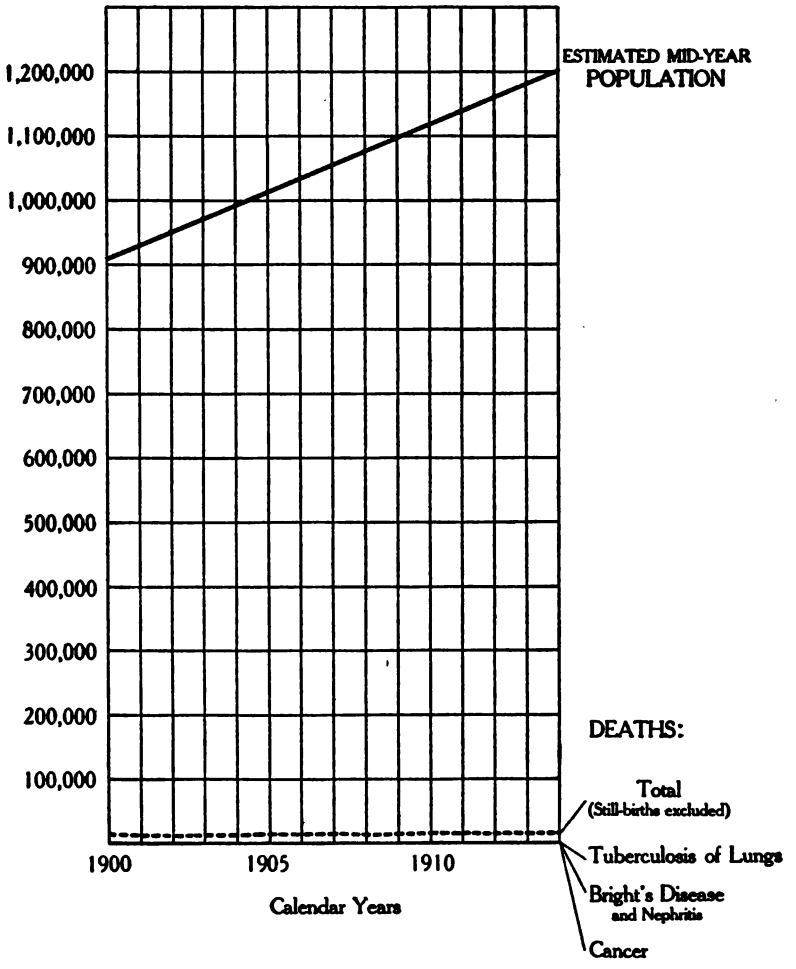
Although the years of small beginnings in a historical record may present no features that require special consideration, the logarith-

DIAGRAM XIV.—ESTIMATED POPULATION, TOTAL DEATHS, AND DEATHS FROM CERTAIN SPECIFIED DISEASES, IN CONNECTICUT, FOR EACH YEAR, 1900–1914

Natural Scale

Data of Diagram XIII



mic historical diagram is again advantageous whenever substantially the same rate of relative increase characterizes the whole period

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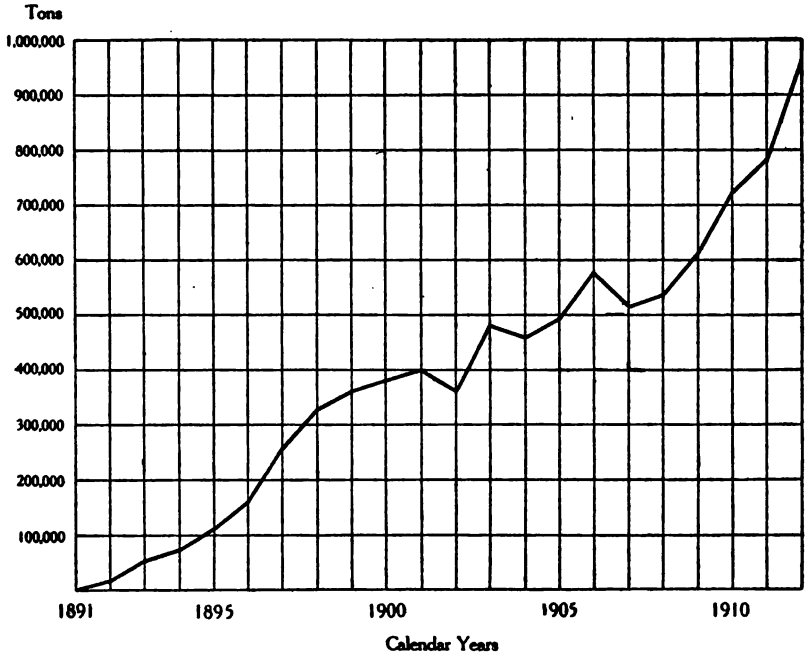
under review. In such cases the general trend or growth-axis of the logarithmic curve will of course be nearly straight. This is interesting for its evidence of consistent growth. It has the further technical merit of permitting the trend of the curve to be approximately maintained throughout at any desired slope by the mere choice of dimensions for the diagram. Hence such curves can

DIAGRAM XV.—ANNUAL PRODUCTION OF TINPLATE IN THE UNITED STATES, 1891–1912

Natural Scale

Data from D. E. Dunbar: *The Tin Plate Industry*, p. 15



readily be kept close to an inclination of 45°, with the result that irregularities of direction are much more easily noticed than if the slope were as steep or as flat as in natural-scale diagrams some parts of the curve often must be.

For the plotting of index-numbers logarithmic diagrams are particularly appropriate, for here the numbers themselves are ratios, and their relative aspect is important. If an index number of general prices should rise from 80 to 100, and later from 100 to

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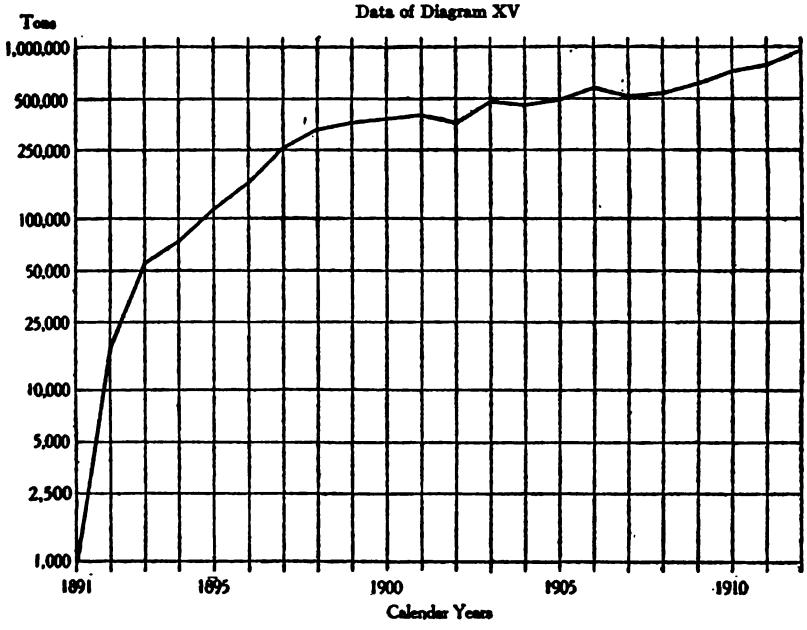
120, the two changes would appear of equal significance in an ordinary diagram. Yet the first is an increase of 25 per cent, the second, an increase of but 20 per cent. In their effects upon the purchasing power of stated money incomes the two changes are by no means the same. A logarithmic diagram reveals their significant difference. Diagrams XVII and XVIII contrast the natural-scale method with the logarithmic-scale method in the case of the general

DIAGRAM XVI.—ANNUAL PRODUCTION OF TINPLATE IN THE UNITED STATES, 1891–1912

Logarithmic Vertical Scale

Data of Diagram XV



index number of wholesale prices from 1890 to 1914, published by the United States Bureau of Labor Statistics. It will be remarked that the logarithmic figure, which does not require a zero base-line in order to convey a true sense of relative values, permits a considerable saving of space.

The foregoing discussion has referred throughout to graphic constructions in which logarithmic intervals may be substituted for uniform intervals in the vertical scale. Such constructions include

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DIAGRAM XVII.—COURSE OF THE GENERAL INDEX NUMBER OF WHOLESALE PRICES PUBLISHED BY THE UNITED STATES BUREAU OF LABOR STATISTICS, 1890–1914

(AVERAGE PRICES FOR THE PERIOD 1890–99 ARE TAKEN AS 100)

Natural Scale

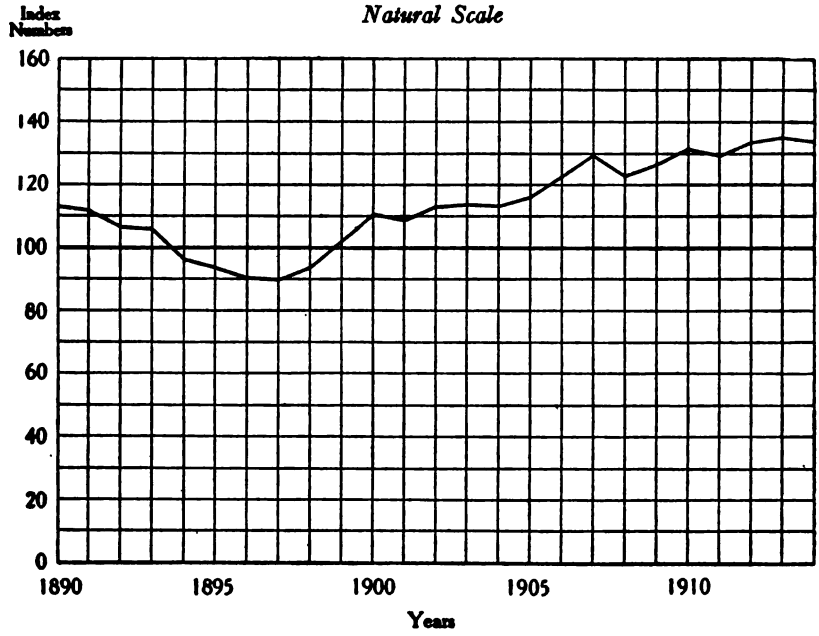
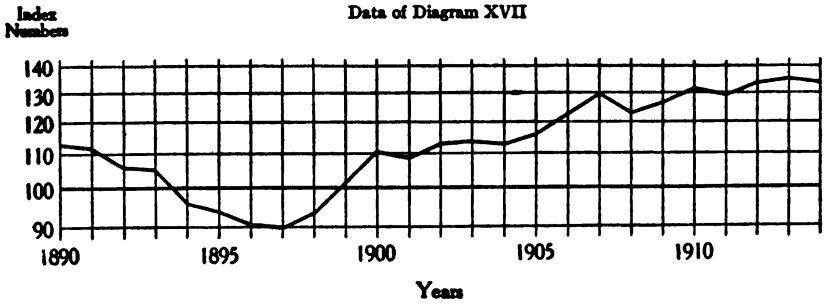


DIAGRAM XVIII.—COURSE OF THE GENERAL INDEX NUMBER OF WHOLESALE PRICES PUBLISHED BY THE UNITED STATES BUREAU OF LABOR STATISTICS, 1890–1914

Logarithmic Vertical Scale

Data of Diagram XVII



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nearly all the important uses to which logarithmic scales have been put in statistical representation. The reason for the prevalence of this usage is sound, but it admits of exceptions. On occasion the horizontal scale may be selected for logarithmic subdivision.

The vertical scale, by convention, is the scale of the "dependent variable," while the "independent variable" is plotted on the horizontal scale. That is, the horizontal scale defines the questions to be answered: the vertical scale shows the answer. The statistical investigator determines the independent variable when he decides upon the terms of his problem. His study of imports, for example, is to be a study by fiscal years. From the moment of that decision, time, in fiscal years, is the independent variable in his investigation. When his results are presented in graphic form, the years will appear along the horizontal scale. Persons who examine his diagrams will recognize the years as the basis of the study, but will fix their immediate attention upon the dependent variable—the annual amounts of imports, measured upon the vertical scale. Because the values of the dependent variable are thus the matter of immediate interest in a diagram, the statistician not unnaturally devotes to them his most careful expository devices, and among others the device of the logarithmic scale for the special elucidation of relative magnitudes.

But precisely because of this emphasis upon the dependent variable it is unfortunate to becloud it with any uncertainty which, for the uninitiated, may lurk in the logarithmic intervals. Since, on the other hand, values of the independent variable are so much taken for granted—since, for example, the notion of successive years of observation is so simple and familiar—it might seem expedient, if it were possible, to use the ratio-scale for the independent variable, to the end that there should emerge a diagram combining the advantages of the logarithmic method with the simplicity of a natural vertical scale. This objective, though not wholly realizable, may be approached in special and limited instances.

Diagram XIX illustrates a simple attempt of the sort. It is designed to contrast the actual growth of population in the United States with the growth that would have taken place if a constant geometrical rate of increase had doubled the numbers every twenty-five years since 1790. The vertical scale, recording population in

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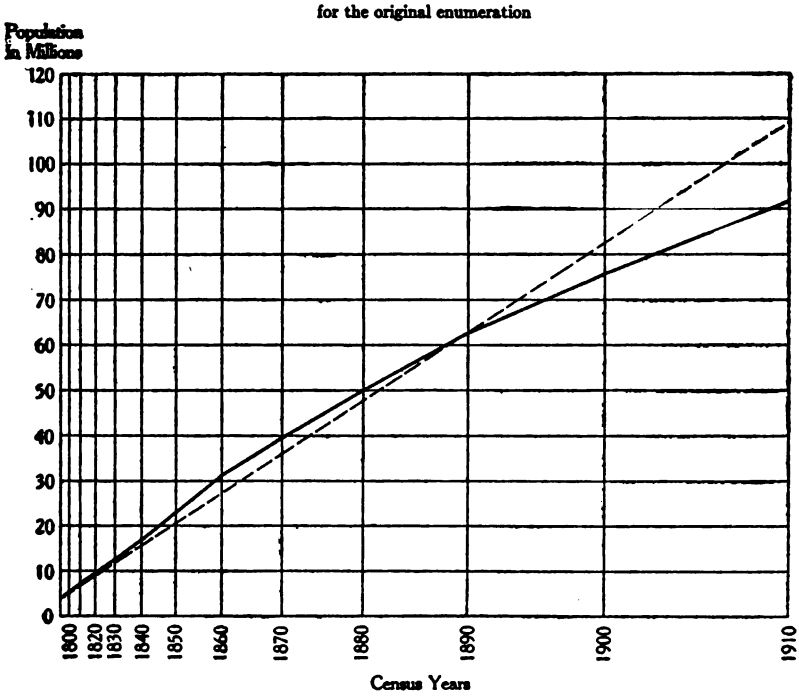
millions, has the natural, uniform intervals. The dates of the successive censuses are arbitrarily marked off on the horizontal scale at such points that the broken-line curve of the figure, representing the hypothetical doubling of population every twenty-five

DIAGRAM XIX.—ACTUAL GROWTH OF THE POPULATION OF THE UNITED STATES (CONTINUOUS LINE) CONTRASTED WITH A HYPOTHETICAL DOUBLING EVERY 25 YEARS SINCE 1790 (BROKEN LINE)

Geometric Horizontal Scale

Data from 13th Census of the United States, I, 24. The revised estimate for 1870 has been substituted for the original enumeration



years, shall be a straight line. In other words, the decennial intervals of the horizontal scale are made proportional to the assumed absolute increases of population during the corresponding periods, and therefore constitute a geometrical series. When the actual growth of population, according to census enumerations,[1] is plotted

[1]As before, in Diagrams V and VI, the revised estimate for 1870 has been substituted for the original enumeration.

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to these scales, the course of the resulting curve, viewed in relation to the straight line of the hypothesis, effectively shows to what extent the predicted rate of doubling has in fact been realized. The deviations of the actual curve (the heavy, continuous curve in Diagram XIX) from the hypothetical straight line are in this construction easily read from a natural scale; but they are of course depicted as absolute and not as relative deviations.

In Diagram XX a similar horizontal scale is utilized for charting depreciation on the basis of an annual shrinkage in value equal to 10 per cent of the value at the beginning of the year. Each interval on the time-scale is taken as $\frac{9}{10}$ of the preceding interval; and consequently the required depreciation curves are straight lines, whatever the original values subject to depreciation.

For its special purpose the construction of Diagram XX is simple and convenient. The method there employed is, however, of much more restricted use than the method adopted in the somewhat analogous case of Diagram VII. In that figure (which might, of course, be read backward to determine depreciation instead of compounded increase) the several curves that show increase at 6 per cent compound interest are not merely straight lines, but lines of the same characteristic slope, whatever the initial amount invested. In Diagram XX the different depreciation curves are not parallel: the slope of each depends on the initial value. Again, whereas in Diagram VII compound increase at any rate other than 6 per cent would be denoted by a straight line of another and equally characteristic slope, curves drawn in Diagram XX to show depreciation at a rate other than 10 per cent per year would not be straight lines. The device of a geometric horizontal scale, as applied in Diagrams XIX and XX, can be adapted to give straight-line curves for any one rate of geometric increase or decrease, but for only one.

The construction of Diagram XX seems at first glance to involve the paradox of complete amortization by the repeated writing off of a fixed annual percentage. The vertical scale of values, being a natural scale, has of course a definite zero base-line which the depreciation curves, being oblique straight lines, must cut if they are sufficiently prolonged. They do in fact cut it in a common

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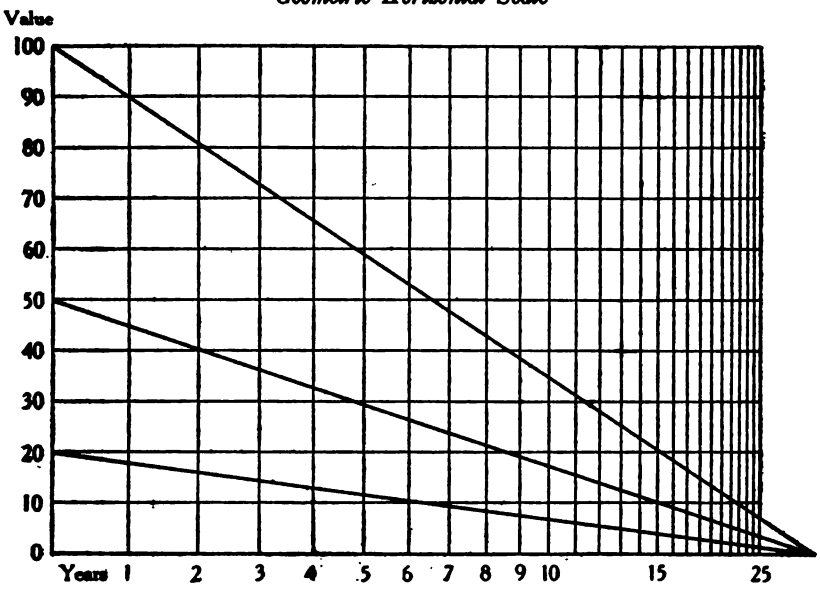
point, as the figure demonstrates. But this point represents, on the scale of years, an infinity of time. Though the graduation of the horizontal scale be extended by any finite number of the dwindling one-year intervals, this point will not be quite reached. Thus the impossibility of final amortization which in a depreciation chart of the type of Diagram IX would be attested by the infinite

DIAGRAM XX.—DEPRECIATION CHART, SHOWING THE RESIDUAL VALUE, AFTER ANY SPECIFIED NUMBER OF YEARS, OF A GIVEN ASSET DEPRECIATING ANNUALLY BY 10 PER CENT OF ITS VALUE AT THE BEGINNING OF THE YEAR

Geometric Horizontal Scale



remoteness of the zero value on a logarithmic vertical scale, here manifests itself in the infinitesimal effect of added years.

Of diagrams with both scales divided logarithmically a single example will suffice. Diagram XXI exhibits, on a double logarithmic scale, the numbers of incomes in the United States which, according to the personal income-tax returns for the calendar year 1916, equaled or exceeded the annual amounts specified. Diagram XXII, with natural scales, presents the same data for amounts up to $100,000. To have presented the full range of the

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data in this form and within the limits of the page would have compelled plotting the amounts of income on about one-tenth the scale actually adopted, with the result of rendering virtually invisible

DIAGRAM XXI.—DISTRIBUTION OF PERSONAL INCOMES SUBJECT TO THE UNITED STATES FEDERAL INCOME TAX, AS REPORTED FOR THE CALENDAR YEAR 1916

The curve shows the total number of incomes equal to or exceeding each specified annual amount

Double Logarithmic Scale

Data from the *Statistical Abstract of the United States* for 1916, pp. 648–49

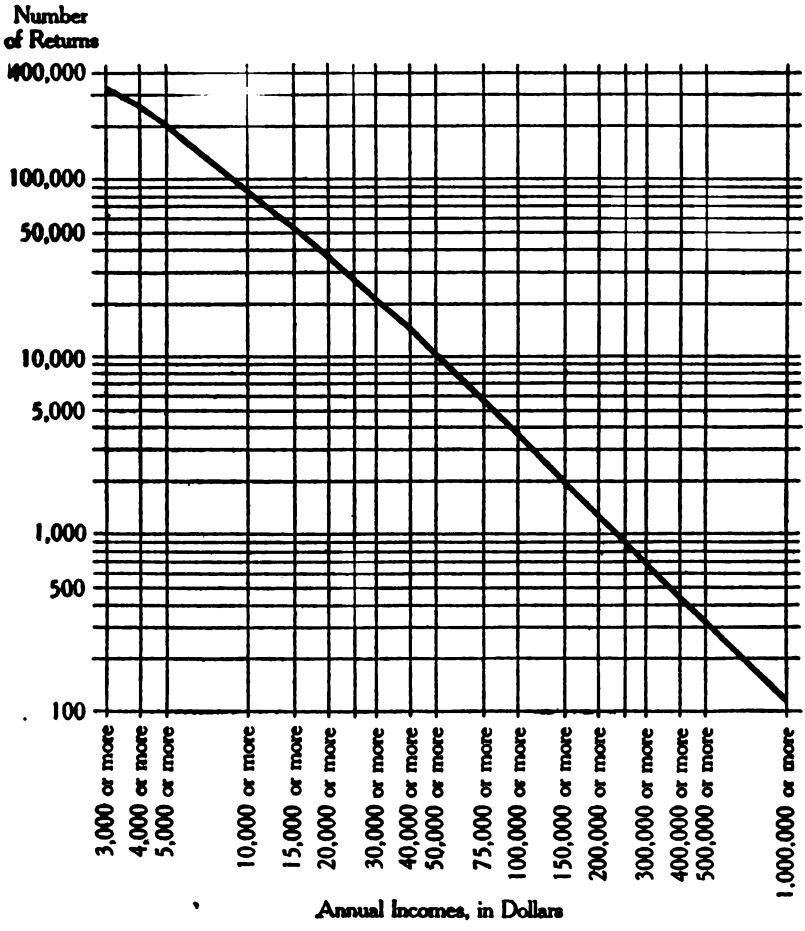

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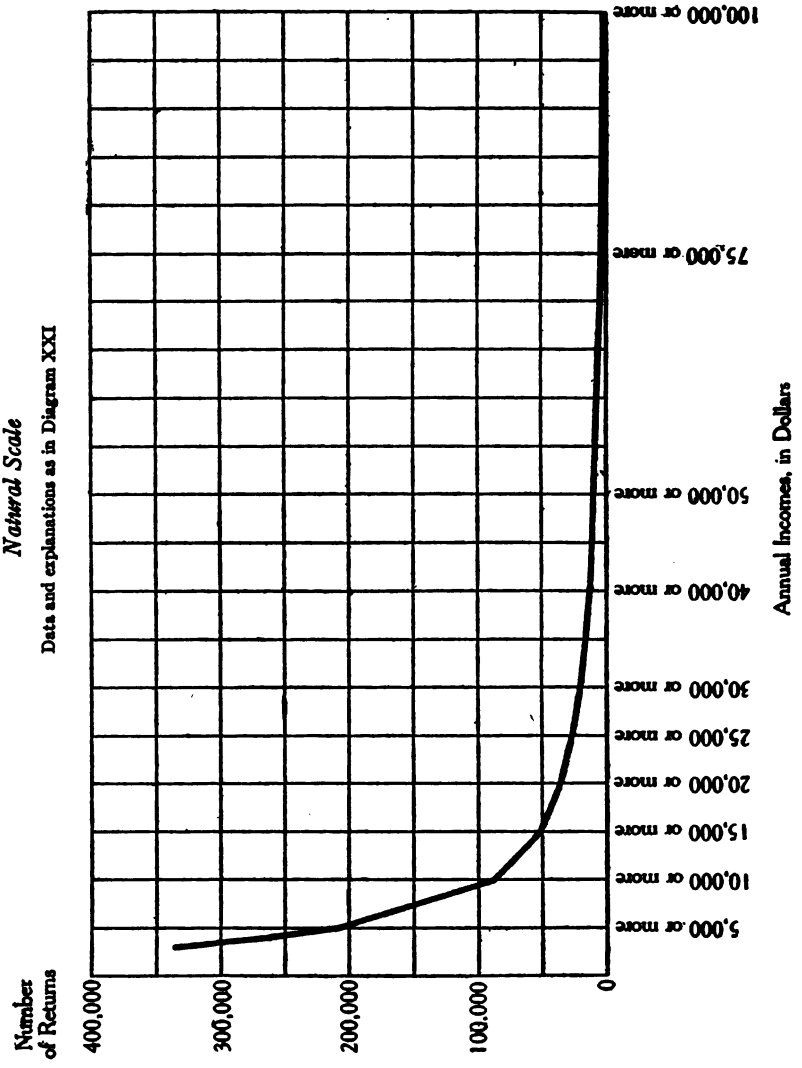
DIAGRAM XXII.—DISTRIBUTION OF PERSONAL INCOMES SUBJECT TO THE UNITED STATES FEDERAL INCOME TAX, AS REPORTED FOR THE CALENDAR YEAR 1916

Natural Scale

Data and explanations as in Diagram XXI



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the detailed distribution of incomes under $10,000 a year—that is, of nearly three-fourths of all the incomes reported. Diagram XXI thus proves again the economy of space which logarithmic scales may effect. In this particular case it serves also a more interesting purpose; for it tests, by these special data, Professor Pareto's generalization, according to which the curve of the distribution of incomes, plotted in this manner to a double logarithmic scale, approximates a straight line.

If it were the aim of this article to explore the full possibilities of logarithmic diagrams as a means of statistical analysis, many other interesting instances might no doubt be adduced. But the intention, as was announced at the outset, is rather to exemplify, and thus to familiarize, the more obvious advantages of the logarithmic scale in graphic representation. That intention has perhaps now been in some measure accomplished.

From the illustrations which have been offered it will have appeared first of all that logarithmic diagrams present ratios and relative changes as directly and simply (though not, to the uninitiated eye, so obviously) as natural-scale diagrams present absolute differences. Consequently the logarithmic method is peculiarly effective when the data are essentially relative; when they exhibit a tendency to increase or decrease at a fixed relative rate; or when significant proportionalities between different series of data are to be demonstrated. Incidentally it serves to economize space, and thus permits the inclusion of very diverse magnitudes in the same figure. These are real advantages, which clearly justify the use of logarithmic constructions in a considerable range of graphic work—sometimes by themselves, sometimes in conjunction with other forms of representation. How extensively such constructions will or should supplant ordinary figures on the natural scale need not now be argued. It is enough to make known their fundamental properties. When these are generally appreciated, we may trust the ingenuity and judgment of statisticians to find for logarithmic diagrams the place that they deserve.

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NOTES

WASHINGTON NOTES

THE COMPLETION OF THE "LIBERTY LOAN"

The completion, on August 30, of the period within which subscriptions to the government loan of $2,000,000,000, offered to the public in May and June, were to be paid, now for the first time permits some more or less accurate estimate of the power of the United States to provide for the maintenance of the war with Germany. Probably the first consideration in this connection that presents itself is the remarkable and more than expected success attained in connection with the loan itself. The fact that, in round numbers, $3,000,000,000 instead of $2,000,000,000 was offered is an interesting, but by no means the most important, feature of the transaction. The most striking aspect of the situation is found in the fact that the diversion of the $2,000,000,000 actually accepted in subscriptions to government uses did not, in any apparent degree whatever, disturb the financial markets of the country. This, in a large measure, is due to the working of the federal reserve system, under which it was possible, not only to retain all of the subscription funds in the banks in which they originated, but also to transfer the subscriptions for bonds from the private holders of the funds to the government, and from the latter to the sellers of goods or to the foreign governments to which they were advanced, without altering the distribution of the nation's cash. The operation of the Gold Settlement Fund at Washington entirely obviated any necessity for shipments of currency or specie from one part of the country to another, and thus the whole transaction was carried through with unexampled ease and rapidity. This success, however, would not have been possible, even with the use of the most perfect mechanism, had it not been for the existence of readily available funds in large volume. Although it was promptly announced that the subscriptions to the loan had come from about 4,000,000 persons, the vast majority of whom had subscribed in sums of $10,000 or less, it was not until near the end of July that there was definite knowledge of the fact that more than three-quarters of the subscribers had promptly paid for their bonds without taking advantage of the instalment plan of payment which the government had arranged in order to permit of the easier absorption of the securities. At the same time

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it became evident that but a small fraction of the new bonds had been purchased by the banks of the country, while only a very moderate amount had apparently been taken by subscribers who obtained from their banks the funds with which to pay for these bonds. These circumstances, taken together, show that the loan has not only been "popular," in the ordinary sense of that term, but also that it has been possible to reach the ultimate investor and to induce him to take up the securities in a way that largely insures their being held out of the market. A doubly beneficial result has thus been obtained—the quick and satisfactory distribution of these bonds and the assurance that new issues will probably not be disturbed by the presence of floating supplies of this first issue. Not only, therefore, in the amount of the loan, but in the success with which it has been distributed, must this bond issue be regarded as entitled to a very high rank, technically speaking, among the popular loans of the United States.

GROWTH OF WAR EXPENDITURES

As in most wars, it is already turning out that the preliminary estimates of cost are far below what experience shows to be necessary. Upon the entry of the United States into the war it was currently supposed that the total outlay for the first year would probably run to $6,000,000,000 or $7,000,000,000, of which about one-half would be used in the form of advances to the allied nations and one-half for the domestic expenditures of the United States. The first six months of the war, however, have shown that these figures are probably about 40 per cent of the actual requirements. According to the latest estimates, the first year's cost, including both loans to the Allies and domestic expenditures, is likely to run into the neighborhood of $18,000,000,000. Of this sum, apparently, probably something like one-half will be likely to take the form of advances to foreign nations, the remainder being spent in our own military preparations, in industrial undertakings necessitated by the war, and in the payment of ordinary expenses. Congress, which at this writing has not yet passed any measure providing for increased taxation, but is still laboring upon the measure originally proposed to it, thus finds the basis of its calculations altered. The Senate had planned to enact a measure carrying a little more than $1,500,000,000 of taxation, and, in the face of estimates of expenditure that have been multiplied some two and one-half times, it now proposes to raise this figure to a point somewhere between $2,400,000,000 and $2,500,000,000. Estimating that the total outlay for the first year is $18,000,000,000, the proportion

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raised by taxation would thus appear to be only about one-seventh of the amount required. This is not quite so small a proportion to be raised by taxation as during the first year of the Civil War, the amount then raised by loans having been as $8.52 to $1.00 of taxation. The outcome is displeasing to several groups of persons. At the opening of the war with Germany there had been a section of opinion which favored what was known as "conscription of income," while, on the other hand, some who were socialistically inclined believed that the present was an advantageous time for the application of their favorite theories of proscription of income. Both groups argued strongly in favor of a very large dependence upon taxation relative to loans. Experience, both here and abroad, is showing, however, the necessity of relying in a high degree upon saving as a source of revenue during the present war. No such sums as have been raised in European countries, or as are now to be obtained in the United States, can be deducted from old incomes without either much additional saving on the part of their owners or the creation of new incomes by the saving process. The discouraging effect of taxation upon saving is well known, and the policies thus far pursued by France, England, and Germany show how clearly these countries of scientific taxation have recognized the necessity of relying upon the saving power of the nation, even while applying taxation of an unprecedented character. Apparently the United States is likely to pass through very much the same experience, financially speaking, that has already been had by Great Britain. The legislative discussion of the past few weeks, however, makes it clearer that the controversy between those who believe in the large use of loans and those who desire to limit such loans so far as possible, and to obtain funds through taxation instead, will be continuous so long as the war continues and new revenues have to be provided for.

"TRADING WITH THE ENEMY"

By adopting, in September, the so-called "Trading with the Enemy act" (H.R. 4960) Congress has taken another step toward paralleling the policies of foreign governments as established during the present war. The "Trading with the Enemy act" should be considered in conjunction with the act adopted on June 15, entitled "An act to punish interference with the foreign relations, neutrality, or foreign commerce of the United States," better known as the "Espionage act." In the latter measure there was contained provision for the control of exports and for the requiring of export licenses as a condition of foreign business.

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The "Trading with the Enemy act" forbids either direct or indirect commerce with enemies of the United States and also conveys power to forbid imports. Much of the text of the latter act is concerned with detailed provisions relating to the control of banking and foreign exchange operations believed likely to result in benefiting hostile nations, with the technique of patent rights, and the like, during the war period, with the disposal and settlement of contracts entered into prior to the war, and other similar matters. The main purpose of the act is, as already stated, that of preventing either goods or money now in possession of persons resident in the United States, or in other countries trading with the United States, from getting into the hands of citizens of Germany. Many of the provisions of the act are of a restrictive nature, prescribing what conduct or action, ordinarily lawful, will not longer be permitted. From a public standpoint the significant aspect of the measure lies in the fact that it establishes a strict control of foreign trade and prohibits, under severe penalty, either trading itself, or the transporting of goods, for the benefit of "enemies." Under the provisions of this act, taken in connection with the act of June 15, already referred to, a far-reaching transformation in the foreign trade of the United States is being effected. Not only has a system of export licenses been developed, such licenses, for all commodities to which they are applicable, becoming a part of the necessary documentary protection of bank loans, but a general policy of restricting the movement of goods and gold to foreign countries has been inaugurated. The most striking example of the results of this policy is seen in the suspension of exports of food products, copper, and the like to European neutrals, notably Holland and the Scandinavian countries, from which, it is supposed, large transfers have been made to Germany by means of re-exports. The effect of the plan is rapidly proving to be that of limiting the necessary means of livelihood of those neutrals who are now unable to supply themselves either from their ordinary sources elsewhere or from the United States. Not only their trade with Germany, but also their necessary domestic supply of consumable articles, is thus curtailed. One effect of this policy has already been that of considerably sharpening the difficulties of the political position of these European neutrals, who may now be compelled by their necessities, either openly or tacitly, to take sides in the contest. The effect of the export policy upon our own trade abroad cannot thus far be predicted, but from the present outlook it would seem that the principal immediate result would probably be merely that of redistributing goods instead of reducing shipments, practically

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everything that can be produced in this country being so strongly in demand as to insure abundant opportunities for its sale.

LEGISLATIVE CONTROL OF FOOD

The foreign economic policy embodied in the two acts already sketched is carried out domestically in the so-called "Food Control act" (Public 41, 65th Congress, first session, approved August 10), whereby there is created a system for the control and use of important products at home. The essential feature of this measure is found in the prohibition of any agreements or conspiracies to limit facilities for transporting, producing, and storing, or dealing in, necessaries of any kind, or the enhancement of the prices of such necessaries. "Hoarding" is forbidden under heavy penalty, and authority is granted for seizing stocks of hoarded articles. The general power of requisition already resident in the hands of the administrative authorities under general law is specifically defined, and conditions of payment for requisitioned articles are prescribed. Quite as extreme as any other element of the act is the provision for the entire or partial suspension of trading on boards of trade and other exchanges; while in line with the general movement toward conservation of food supplies is the prohibition of the use of foodstuffs for distilling from and after a date of thirty days subsequent to the passage of the act. A section which is raising more difference of opinion than perhaps any other is sec. 25, in which authority is granted to the President of the United States to fix prices of coal and coke, and in case of necessity to take over the plants and mines engaged in producing these articles. Work has already begun under the Food Control act for the purpose of conserving and controlling the grain supply, while negotiations with coal and coke producers have been under way for some time past. The question whether the large powers granted in the act will be sufficient to accomplish the same objects that have been attained in other countries remains to be settled. On two points question may be raised: (*a*) whether the control of prices will be effective unless producers are in some way compelled to produce and sell at these prices; and (*b*) whether, even with steady production and sale at fixed prices, consumption can be sufficiently limited by voluntary consent of consumers throughout the country to make the conservation movement really effective and satisfactory in its operation. It is probably true that, at the present time, the further application of the policies embodied in the Food Control act in such a way as to cover production, sale, and consumption would not be sanctioned by public opinion, and the whole policy will necessarily depend for success in practical application upon

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the way in which it is administratively developed and upon the attitude adopted toward it by the public in general. This in turn depends upon how far Americans at large feel disposed to go in application of national resources to the support of the European war, since the essential object of the legislation is that of raising our possible exports of foodstuffs to a maximum in order that the fighting force abroad may be currently maintained. The whole food control system, while an outgrowth of necessity, embarks the United States upon a field of enterprise which has heretofore been entirely foreign to its principles and practice of government and which, both in the practical working of the system and in its general effect upon governmental methods and policies, will necessarily have to be developed by a process of experiment.

INVESTMENT EFFECTS OF THE WAR

One important result of war financing is seen in the effect produced upon investment securities of every description. Since the placing of the great government loan of May and June, 1917, there has been a sharp downward movement both in stocks and in bonds, this reduction being distinctively a change in investment values, and not primarily the result of any alteration either in speculative conditions or in industrial outlook. The falling off in the case of some first-class securities has amounted to as much as 10 per cent of their value, the rate of decline varying considerably according to the term the security has to run and the rate of interest it brings. This decline is the result of a complex series of factors. First of all, the placing of the government loan, of course, diverted from their normal channels investment funds which would otherwise have been available and would have been offered for the purchase of existing shares and bonds. Secondly, the establishment of a new and much higher rate of interest on government bonds themselves—the premier security of the world today—undoubtedly changed the underlying basis of income calculation for practically all investments. In addition, the element of tax exemption introduced a factor the importance of which can be only remotely estimated. In the case of some individuals of very large income who were induced by the fact of tax exemption to shift their available funds from private to public bonds the influence may have been very substantial. In the case of other persons of smaller revenue it has been less directly significant, although of some influence. On the whole, it must be reckoned as a factor of considerable, although of eccentric, importance. As a countervailing factor, offsetting these various influences already enumerated, may be mentioned the withdrawal, to a very large extent, of private issues from the market. A very few short-

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time refunding or financing operations have been undertaken and carried through, but it is generally admitted that to an increasing extent the fluid wealth of the country must be devoted to the uses of the government and is less and less likely to be readily available for any private or industrial investments. There has thus been brought about, even at this early stage of the war, a striking transformation of the conditions under which capital is borrowed and applied. This and its implied result must undoubtedly be one of the permanently significant influences growing out of the war. Not until the economic pressure on the country is lessened through the reduction of taxation and the withholding of government loans would it again be possible to resume the normal development of other resources and the production of the usual quantity of consumable goods. Meanwhile the supply of such goods would be reduced in proportion to the withdrawal of capital already referred to, and the wants of the population will be progressively more difficult to satisfy as the period subsequent to the suspension of normal investment grows longer and longer. It is a remarkable feature of our war financing that this important result should have been reached so early in the war. In the case of Great Britain it was not fully developed until a much later date. This earlier transformation in the United States is due to the fact that the effects of war financing are immediately and directly felt here, whereas in Great Britain they were in a measure postponed through the placing of a part of the burden, almost from the very outset, upon the British colonies and foreign countries, including the United States. This shifting of the loan to other financial markets necessarily masked for the time being its real consequences and gave opportunity for a continuance of home investment, although naturally this was upon a smaller scale than that which had prevailed before the war. At present there is no possibility of shifting the burden in this war from our own country to other nations. The financial results, therefore, make themselves felt more quickly than they did in Europe.

RESERVE BANKS AND THE WAR

The effect of the war upon the business of the federal reserve banks is now sufficiently advanced to permit of some estimate. Without, of course, being able to anticipate so early and extensive a demand for their services in this connection, the framers of the Federal Reserve act had provided that the banks should act as fiscal agents of the government. Prior to the entry of the United States into the European war these fiscal functions had been but slightly developed. About fifteen months earlier the Secretary of the Treasury had designated the various reserve

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banks as public depositaries and had instructed that funds be transferred to them from the local depositary banks in cities in which the reserve banks were located. This resulted in giving the several institutions a moderate volume of deposit and withdrawal business, and the experience thus gained was of great value when the time came for the real acceptance of their fiscal-agency functions. Soon after financial arrangements growing out of our entry into the war had been undertaken the Treasury Department determined to place the whole task of floating the new loans in the hands of local committees, headed in each case by some representative of the federal reserve bank for the district. This has resulted in giving to the reserve banks the leadership in matters of loan organization. At the same time the depositing and withdrawal of funds have been practically turned over to the federal reserve banks, the Gold Settlement Fund at Washington becoming the medium whereby the proceeds of the loan already gathered into the district federal reserve banks are shifted to those parts of the country where they are needed for actual use, either in making advances to the allied governments or in paying for commodities and services on behalf of this government. The result has been to require an immense development of the staffs of the various federal reserve banks, with corresponding increase in expenses. At the same time, however, a much more than proportionate increase in income has been realized by the several banks as a result of rediscounts and purchases made by them in connection with the loan, either for the sake of facilitating the actual lending operations of member banks or for that of relieving the market by returning to it cash which would otherwise have been withdrawn. The effect has been to increase net earnings so rapidly as to enable several of the banks to cover a substantial portion of the dividend payments for which they were in arrears; and, while existing conditions continue, it may reasonably be expected that every reserve bank will, at an early date, have met all of its cumulative dividend requirements and be in position to make a return of surplus income to the government, as provided in the Federal Reserve act itself. The rapid expansion and overshadowing importance of government financial operations has naturally tended to divert the attention of federal reserve banks from operations in which they would otherwise have been interested, but its larger result undoubtedly is that of making the banks, more truly than ever before, effective working organizations, capable of sustaining themselves and of meeting new conditions as they arise. The fact that the final transfer of reserves from the old holders to the new reserve banks has coincided with the beginning of active war work has unfortunately tended to obscure the real consequences of this reserve transfer.

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So far as can be judged from the figures, the transfer has shifted to the reserve banks somewhat less than $275,000,000 of reserve money. At the same time the Federal Reserve Board has issued to reserve banks instructions calling for the introduction of a collection system for maturing notes and drafts, thus completing the check-collection system already in force. The banks thus take their places as genuine agencies for the transaction of inter-bank business, as well as for the other business arising between the banks and the government. A broad field of activity and expansion is thus opened to them, and with proper cultivation this increase in service and significance will continue its growth entirely independent of temporary or abnormal war conditions.

THE CAUSES OF UNEMPLOYMENT: A COMMUNICATION

[The editors of the *Journal of Political Economy* have received the following note from Professor H. Stanley Jevons of the University, Allahabad, India, and take pleasure in publishing it in accordance with the suggestion of Professor Jevons.]

Professors of economics and librarians in the United States have experienced some difficulty in tracing a supposed publication of mine entitled *The Causes of Unemployment*, which was mentioned by Mr. D. H. Robertson in his recent book, *The Study of Industrial Fluctuations*. *The Causes of Unemployment* to which this author refers was a reprint of three articles originally published in the *Contemporary Review* of May, July, and August, 1909. When reprinted, it was privately circulated and was not published. It appeared to me, however, that the last of the three articles, which dealt with the causes of the trade cycle, with illustrations from statistics of the United States, was of sufficient permanent importance to warrant republication; and it was published in 1910 by Messrs. P. S. King & Son under the title of *The Sun's Heat and Trade Activity* and with the subsidiary title of "Changes of the Sun's Heat as the Cause of Fluctuations of the Activity of Trade and of Unemployment." It is still obtainable from the publishers; but I have also a certain number of copies available for exchange or presentation, and I have sent thirty copies to the Smithsonian Institution, from which they may be had gratis by university and college libraries, though I should be glad if any university not already exchanging its publications in economics with the *Indian Journal of Economics* would send any such publication in exchange, either to me or to the University Library of Allahabad.

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BOOK REVIEWS AND NOTICES

Conditions of Labor in American Industries. By W. JETT LAUCK and EDGAR SYDENSTRICKER. New York and London: Funk & Wagnalls Co., 1917. Pp. ix+403. $1.75.

The insistent demand in recent years by groups of laborers and social reformers that the conditions of life of wage-earners be improved has, as is well known, resulted in a number of investigations by government commissions, bureaus of labor, and students of the labor movement. The output is considerable and widely scattered. Students will, and others should, therefore, welcome a work which aims to present "a summarization of the principal and fundamental facts that have been ascertained during the past decade and a half" in these investigations, and especially a volume which attempts to give but the mere facts, wherever possible in a convenient statistical table, with only such conclusions as seem to be clearly warranted by the facts. Use them as you may, the facts remain.

The book may be divided into two parts: "working conditions" and "living conditions." The first is introduced by a statistical statement of the labor force and followed by a discussion of wages and earnings and the annual incomes of wage-earners' families. Conditions causing irregular employment, hours of labor, industrial accidents, occupational disease, employers' methods (welfare, scientific management, etc.), and woman and child labor are treated with more or less detail. Under "living conditions" the adequacy of wages and earnings, the wage-earner's health, diet, housing conditions, etc., are entered into rather briefly. The material (in the main) is taken from the reports of the investigators for the Federal Commission on Industrial Relations, from the reports of the Immigration Commission, from the United States and state bureaus of labor, and from a number of private investigations, and presented, it might be said in passing, without undue modification. American conditions and American writers fill the pages almost exclusively.

We are told in the preface that the authors had "to sacrifice much interesting and some illuminating data." We must assume—the authors do not discuss the matter—that they had a theory of selection which

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determined the character and quantity of the material which was included. The work is offered "as a summarization of the *principal* and *fundamental* facts" of recent investigations. The compilers no doubt had in mind certain specific labor problems or conditions upon which light would be thrown by their collection of data, for without specific problems there are no facts. The question that naturally arises then is: How broadly have the authors conceived labor problems and what have they picked out as the most important data to aid in their solution? Incidentally this involves the question also of the care and thoroughness with which the facts have been organized.

A chapter is devoted to "The Labor Force," in which is presented the racial composition of our industrial workers, the extent of trade-union membership, as well as the number of women and children in industry. That these are useful facts for *some* purposes we may well believe—although nothing is said upon this important point—but it might be seriously questioned whether they are the most significant facts to be included under a chapter so headed; whether they give us much insight into the living reality and dynamic force of the labor movement. The workers are not only *found in* industry, they are *transforming* it. And what they are attempting to do cannot be adequately revealed by their racial composition or by the size of their unions, for their group programs cut across such classification. In other words, one will not criticize the chapter if he seeks so-called "useful" facts. He will question it if he is after facts of fundamental significance.

The major portion of the book deals with wages and hours, unemployment, accidents, etc. These are *the* conditions of labor. It is quite comprehensible that this point of view should be taken. Business unionists, social reformers, and legislators have busied themselves almost exclusively with these matters, and there is a respectable body of easily organizable data at hand. The problems are more or less related to one another, they can be easily assimilated by an intelligent reader, and hardly any discussion of remedies need be entered into, because minimum-wage laws, workmen's compensation, social insurance, etc., are familiar to all. One's assumptions will go unchallenged because one drifts with the current of a stream of social tendencies. Hence a collection of mere facts without any critical discussion of them meets a practical need. But for all that, some readers who do not look too closely into statistical tables to find inaccuracies or into the question of the organic arrangement of the parts of a volume will ask themselves, Do we not need other facts dealing with the fundamental aspects of the

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wages system, facts concerned with the whole scheme of social arrangements, facts throwing light on the programs of diverse labor and social groups? Do we not, in a word, need facts on these matters before we shall have *the* knowledge we need to solve our pressing labor problems?

NATHAN FINE

UNIVERSITY OF CHICAGO

The Development of Transportation in Modern England. By W. T. JACKMAN. Cambridge, England: University Press, 1916. Pp. ix+820, bound in two volumes. 24*s*. net.

If we grant the truth of Macaulay's famous statement regarding the importance in the history of civilization of improvement in the means of communication and transportation, we must recognize that the history of the means by which men have abridged distance has been shamefully neglected. It has been treated only incidentally, or has been taken in hand by social historians of the old fashion, who constructed their work of individual fragments vivid with local color, but lacking connection with the institutional fabric of the period and without general significance. English historians have been behind their Continental brethren in applying new methods to the investigation of the field, but interest in it has awakened in recent years, and the present work provides a study worthy of its subject and fit to stand beside the best works of its kind.

The author sketches in an introductory chapter the conditions of transportation in Roman Britain and in mediaeval England, but makes "modern" England, in the period between 1500 and 1850, the particular object of his investigation. The first volume covers the history of internal transportation by land and by water down to 1830, including the great canal era and the beginnings of steam navigation; the second volume traces the early development of railways and their competition with roads and canals down to the middle of the last century.

The author gives in his first chapter a sample of the method that makes his work so valuable, in his examination of the statements of Thorold Rogers and others, that roads were good and communication was easy in mediaeval England. Evidence is presented both for and against these propositions, but the author here as later considers, not merely the "what," but also the "why," of things that he discusses, and finds a sufficient explanation of the low rates of land carriage in economic conditions quite apart from the character of the roads. So

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in the following chapters his first care is to sift the facts, derived from a multitude of local sources, and then, when he can, to construct from them a general statement that is true within certain limits of error and that appears reasonable in the light of the conditions. He shows that the roads were bad down to 1750; he shows why they were bad; and he goes a long way toward showing just how bad they were by the patient collation of rates and costs. He tells us that he has been engaged in his work for almost ten years, and the bibliography, including only the most important sources of his information, covers more than sixty pages and embraces material of the most varied character. Yet the merit of his work lies fully as much in the scientific reserve with which he states his conclusions, and the candor with which he suggests his doubts, as in the value of the bare facts accumulated.

Enough has been said of the author's method and materials to make clear the importance of his work and likewise to explain why a brief summary of its contents is impracticable. His conclusion, for example, that the cost of canal carriage normally did not exceed one-half, and in most cases was from one-fourth to one-third, of the cost of land carriage is a statement apt for quotation and a very convenient formula for provisional use; but in its place in the author's text it has a significance which it loses by removal.

The author tells us what the English people have thought about their means of transportation, what it has done for them in private and in public ways, how it has used them, and what return those individuals have secured who were most directly concerned with the improvements. The influence which the means of transportation have had on the methods of market distribution, on the organization of production, and on the increase of wealth is indicated, but is not discussed at length. The author intimates in his preface that he has much more that he can say upon these topics, and we must hope that he will not keep us waiting long before he makes his contribution to them.

CLIVE DAY

YALE UNIVERSITY

Separation of State and Local Revenues in the United States. By MABEL NEWCOMER. (Columbia University Studies, LXXVI, No. 2.) New York: Longmans, Green, & Co., 1917. 8vo, pp. 195. $1.75.

After a general introduction in which, among other things, the theory of, and the arguments for and against, separation of the sources of state and local tax revenues are presented, the author of this dissertation reviews experience with separation, partial or complete, in Delaware, Pennsylvania, New York,

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Connecticut, New Jersey, Vermont, West Virginia, and California, and then presents her conclusions. The chapters relating to the experience of the several states contain brief reviews of the growth of expenditures, the development of special taxes, and reform in tax administration in each case, for separation is merely one of the devices resulting from the efforts to solve tax problems. Separation has resulted in an improved administration of taxes employed by the state, but it has in some cases retarded a greatly needed centralized administration of the general property tax; it has brought about a more just taxation of certain forms of property and corporations, but it has not been accompanied by any noteworthy improvement in the assessment of property for the levy of local taxes; it has made local option in taxation possible, but that doubtful expedient has not made headway; it has not seriously inconvenienced the local governments in securing needed revenues, but most of the states have returned to the taxation of "general property" for state purposes because of the need for additional and elastic revenues. The estimate placed by the author upon the separation of sources is indicated by the closing paragraph, which runs as follows:

> There are no advantages to be derived from complete separation which cannot be derived in other ways, and there is little likelihood that it will become a permanent feature of any state's system; but as a transitional stage in the movement from the general property tax widely applied to classification for taxation it will doubtless play an important part. In the states where it has been introduced thus far it has been a mark of progress.

Shortcomings in the selection and interpretation of data as well as in exposition make *The Separation of State and Local Revenues in the United States* a mediocre doctoral dissertation.

The Financial Administration of Great Britain. By WILLIAM F. WILLOUGHBY, WESTEL W. WILLOUGHBY, and SAMUEL MCCUNE LINDSAY. Introduction by A. LAWRENCE LOWELL. New York: D. Appleton & Co., 1917. Pp. 362. $2.75 net.

The Budget. By RENÉ STOURM. A translation from the seventh edition of *Le Budget*, Paris, 1913. THADDEUS PLAZINSKI, translator; WALTER FLAVIUS MACCALEB, editor; Introduction by CHARLES A. BEARD. New York: D. Appleton & Co., 1917. Pp. 619. $3.75 net.

These volumes are the first of a series published for the Institute for Government Research. This is "an institution of citizens co-operating with public officials in the scientific study of business methods with a view to promoting efficiency in government and advancing the science of administration. The program of action which the Institute has taken to itself is that of seeking to bring into existence information and materials which will prove of value, both in forming public opinion and in assisting all officials, and particularly those of our national government, charged with the administration of

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government affairs in their efforts to put such administration upon a more efficient basis."

The Financial Administration of Great Britain is in the form of a report by a commission of three American scholars whose qualifications, as investigators, are well known to the readers of the *Journal*. The original plans of the commission involved an intensive study of the financial administration of Germany and France as well as of that of Great Britain, but these were interrupted by the war, and only the investigation of the British system was completed. It is to be regretted that the plans of the commission could not be carried out as originally conceived.

The authors of *The Financial Administration of Great Britain* have succeeded admirably in setting forth the fundamental principles upon which the British system rests and in bringing out clearly the specific means employed in putting these principles into execution. The details relating to estimates, voting of moneys, auditing, etc., are set forth accurately, and conclusions are drawn with more or less reference to our own situation. The volume is an important and timely contribution.

Those who teach public finance to undergraduates have long felt the need of a translation of Stourm's standard work on the budget. This need has now been met. The translator has performed his difficult task fairly well, while the editor has corrected a few mistakes made by the author in his description of American budgetary procedure.

Women and Work. The Economic Value of College Training. By HELEN MARIE BENNETT. New York: D. Appleton & Co., 1917. 8vo, pp. 287. $1.50.

In this book Miss Bennett has, to use one of her own oft-recurring terms, "blithely" attacked the question of vocational advice for the college girl who, having chosen a non-technical course, finds herself unwilling to teach. From her college-woman point of view Miss Bennett has written, in a rather noticeably journalistic style, a readable and somewhat amusing interpretation of experiences and impressions that have come to her as manager of the Chicago Collegiate Bureau of Occupation. She has, however, made a mistake in adopting a more pretentious title for her work than the results of her efforts warrant. The book falls far short of being an adequate discussion of "women and work," and only incidentally does it deal with college training as a distinct economic asset. It has interest for the vocational adviser and for the young woman looking uncertainly for a sphere of usefulness. However, the title only vaguely suggests this. On the other hand, having lured the attention of the student of economics by assuming to undertake an evaluation of college training for women, it leaves him with the disappointed realization that he must look to the future for a competent treatment of the subject.

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Fundamental Factors in War Finance *Frank F. Anderson* **857**

Taxation *versus* Bond Issues for Financing the War *E. Dana Durand* **888**

Industrial Conscription *Harold G. Moulton* **917**

Notes **946**

Washington Notes: **946**
Increase of Federal Reserve Membership—Progress of Public Financing—The Gold "Embargo"—Control of International Trade.

Book Reviews and Notices **952**

RICHMOND'S *Social Diagnosis* (Robert E. Park), 952.—MAVOR'S *Government Telephones: The Experience of Manitoba, Canada* (W. J. Donald), 954.—AGHNIDES' *Mohammedan Theories of Finance* (Leon Ardzrooni), 955.—ROE'S *English and American Tool Builders*, 957.—HORNBECK'S *Contemporary Politics in the Far East*, 958.—PREYER'S *Die Arbeits- und Pachtgenossenschaften Italiens*, 959.

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FUNDAMENTAL FACTORS IN WAR FINANCE

The first flurry of discussion of war finance which accompanied American entrance into the conflict has now (September, 1917) subsided. But the critical importance of the issues involved promises to grow with the progressively increasing share of the burdens which the United States will have to assume as long as the policy of Allied victory and a dictated peace is adhered to. The present is therefore an opportune time to broadly reconsider these issues and to summarize the conclusions to which an attentive student of past discussion has been led.

I

Superficially war is paid for with money, but in reality it is fought with vast quantities of goods. What, then, are the physical sources from which these goods may be derived?

First, and least of all under present conditions, may be mentioned future income to be produced after the war, in so far as American claims to it are sold or mortgaged to neutral countries in exchange for abnormally large portions of their present income. But as the power of countries still neutral to lend such goods for future payment is very limited, this source may be dismissed as of very minor consequence.

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Likewise past income might in a sense be drawn upon, if taxation were so severe as to allow neither a return to the ownership of capital goods nor sufficient funds to offset their depreciation. But such taxation would doubtless not be feasible, nor has it been proposed by the most "radical" of counselors. Hence this resort is altogether negligible.

The really important sources therefore are those of *present production*, which are available through several different channels, briefly: (1) the diversion of present energies to unwonted tasks, (2) the intensifying of the average worker's productive effort, and (3) the elimination of waste effort.

There are two sorts of effort which may be diverted to war purposes: (*a*) the creation of machines and other "instruments of production," which for all non-military purposes has now virtually been stopped in England; and (*b*) the operation of such existing "capital goods" as produce nonessential "consumers goods." Examples of the latter are alcoholic liquors, fine clothing, more or less ornamental public works and magnificent churches. Or, again, (3) some effort may be liberated by substituting less costly articles of "necessary" consumption for others, e.g., by replacing meat largely with rice as an important article of food.

The value of such abstinences depends, of course, on the extent to which the energies freed may be applied to war purposes. Much of our existing stock of capital cannot be so applied because (like breweries) it is not adapted to alternative uses, although the machinery in our vast array of automobile factories is notably convertible. But our supply of laborers and managers is highly "mobile" as to place, and considerably "mobile" as to occupation, especially if organization is provided to facilitate the transference to war tasks. And such organization is highly essential to realizing any great part of the possibilities of individual transformation.

Of course this method must involve considerable loss and inconvenience to those now in the nonessential industries, like the milliners and the silk producers, who began at an early date to agitate against curtailment of the demand for their goods. It involves (*a*) loss of rewards formerly received for special skill or knowledge not usable in alternative war occupations, (*b*) loss of the

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yield of idle machinery, and (*c*) losses due to the enforcement of long-time contracts for unusable materials, unless such enforcement is waived during the war by the sellers or excused by law, as it should be. And these private losses are inevitable, if there is to be any genuine and speedy "mobilization" of the dispensable energies of the country.

We cannot have that and have "business as usual," for which men of affairs like Mr. Howard Coffin, and organizations like the Rotary Clubs, put in an early plea. "Business as usual" offers at best only the profits from unnecessary consumption as aid to the government, which some critics seem to think it must receive through such channels if at all. They forget that to stop that consumption may *afford nearly the whole fund* otherwise so expended.

As already stated, this stoppage means reduced rewards for some, notably for "promoters" and for those among the more skilled workers whose special functions are temporarily not in demand. But it does *not mean unemployment* so much as changed employment. If the work on skyscrapers lags (as it should), the work on an emergency fleet booms, the restricted building of pleasure cars is compensated by the increased construction of trucks and tractors, those who can't find work upon civilian clothing will find it in making army uniforms, and so on. True, this demands accommodation on the part of the worker, but nothing like what going to war demands of the soldier.

The extent of resources which could be made available, if all unnecessary consumption and all private investment could be shut off without any lag in industry, may be seen from the estimate of Dr. Eliot that our annual expenditure for "luxuries," such as liquor and tobacco, automobiles, candy and chewing gum, amounts to 5.3 billion dollars, and from the National City Bank's computation[1] that our new capital investment in the recent past has averaged at least six billion dollars and probably considerably more than that. Twelve billions is doubtless a conservative estimate of the two items together, at the prices prevailing in 1914.

The third source of war aid mentioned is intensification of effort. The writer regards this as less important than the first, for

[1] Cf. *Economic Circular*, May, 1917.

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the reasons that industry is already highly speeded up, owing to the abnormal demands of the past three years, and that the withdrawal of a million or more men for military service will largely offset whatever influx of women into industry there may be.

The fourth source, elimination of waste in productive processes, seems to offer larger possibilities. It might be more easily applied in distributive lines than in productive lines—England now has purchase and sale of staples like sugar and cotton by government war monopolies which save all the lost motion of competitive methods. Owing to the inertia of customary habits, "scientific management" is more difficult to introduce widely in factory processes, but it likewise (together with a system of labor clearing-houses) contains vast possibilities of saving and utilizing effort. However, government monopolies or "scientific management" in private industry require either such elaborate administrative machinery or such a break with past practices that these "sources" will receive only minor notice here, not because they are unimportant, but because they are less immediately available and less directly connected with the theme of finance as traditionally defined.

These, then, are the main "sinews of war": reduced consumption, reduced capital investment, intensified effort, and diminished waste effort. And, to repeat, they are all *present sources*. For, except for negligible borrowings from foreigners, our own citizens must *pay now* out of current income whatever the government spends now, and, taking the nation as a whole, it is *simply impossible for "posterity to share the burdens"* (although posterity must of course suffer hardships due to the inevitable shrinkage in the supply of new capital goods).

The government may indeed promise certain contributors repayment "out of future production." But this "burden on posterity" *is paid to posterity* and is therefore not a burden at all to the future nation as a whole. Hence from the community standpoint, if we assume the various plans of finance to be equally effective in diverting supplies now for government use, the distribution of burdens in terms of wealth as between present and future is the *same in any event*. The case is different, however, as regards burdensomeness to individuals, as will hereafter be shown.

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II

The various methods of war finance may be briefly classified as voluntary or coercive, according as those who in the last analysis surrender the goods do so freely consenting or not. The term "borrowing" covers, of course, all the expedients under the first head, whether the debt be represented by a short-term "note" or by a longer-term "bond." But, if carried beyond certain limits, "borrowing" may also involve coercion, as will presently appear.

The coercive methods are more numerous. The more elaborate forms which involve the control of maximum prices may affect: (*a*) goods purchased directly by both the government and its own citizens or (*b*) goods monopolized by the government for resale with or without profit—usually with profit. The simpler forms which only indirectly (if at all) affect prices are: (*a*) taxation, (*b*) the issuance of legal tender notes ("fiat money"), debasement of the coinage, and (*c*) such bank loans directly or indirectly to the government as result in a net expansion of the sum total of bank loans. As these simpler methods seem more readily adapted to "democratic" use and have figured more in recent discussions, attention here will be paid chiefly to them.

All these latter methods are calculated, of course, to increase the government's share of purchasing power, either without increasing the number of monetary "counters" (in the case of taxation) or by increasing that monetary fund (in the other cases). And at the same time the general level of prices rises. But, whereas under taxation this is due primarily to a gradual shrinkage in the supply of labor and of new capital and to the centering of demand upon fewer classes of expenditure, the tendency is *accentuated* in the other cases by the mere increase in the number of "counters" competitively offered for goods, without any corresponding increase in the supply of goods themselves.[1]

But is it necessary that the borrowing policy should result in a net increase of bank loans and of deposit circulation, based thereon? It is not inevitable, but that is what almost invariably happens. And this for two reasons: first, the government does not offer an interest rate high enough to get all needed funds from individuals

[1] Cf. *London Economist*, October 21, 1916.

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by transfers from their existing bank accounts to its own; and, secondly, to make up the deficiency the banks do not diminish their existing loans to individuals as much as they increase their loans to the government, directly or through intermediaries who borrow of them for that purpose.

It may be urged, however, that a bank's first concern is to keep its deposit liabilities down to a certain multiple of that portion of its assets defined as "reserve"; that self-interest will prompt it to loan exclusively for "business" purposes, as long as "business" rates continue higher than the government rate; and that, whenever the two rates are equalized, the reserve will be protected by denying "business" to the same extent that the government is accommodated.

But this argument errs in assuming that the multiple of reserves considered safe by bankers does not vary (under given business conditions) according to the *composition of their assets* and that maximum interest rates alone determine those assets. The truth seems to be rather that the safety of government bonds prompts banks not only to loan above what would otherwise be their "normal" multiple of reserves, but to do so at rates lower than those to ordinary borrowers. Especially is this true when the government rate is 3½ per cent or more, tax-free, instead of 1½–2 per cent net, as in former years, and when motives of patriotism and of deference to outside "pressure" are added to the motive of self-interest.

But the mere stretching of reserve multiples is not the only means of expanding loans in countries, like our own, where the government has been keeping gold in its own vaults. For the mere transfer of this gold to bank vaults, with the tacit understanding that it is to be used to "help the government," instantly swells those basic reserves themselves.[1]

But whatever may be the motives of this complex procedure, the result is well illustrated by the course of events in England where, although the reserve of the Bank of England gained in absolute amount over 50 per cent in the first two and one-half years since the war began, in the same period its ratio to demand liabilities fell from 40.3 per cent to 18.5 per cent. Of the $14,000,000,000

[1] Cf. *New York Times Annalist*, July 10, 1916.

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which England borrowed in that period, approximately $2,000,000,000 appears to have come from the expansion of bank loans,[1] about half of which were made directly by the banks, and the other half indirectly through private borrower-lenders.[2]

The result of course is an unprecedented rise in general price levels. And for whose benefit? Certainly not the government's, because it loses vastly more in price increases than it saves in interest charges, nor does it recover more than a fraction of these losses in excess-profit taxes. Certainly not the wage-workers', because, as Sidney Webb states, while money wages in England have gone up 20–25 per cent, prices have increased much more, and thus commodity wages have fallen.[3] But the people hardest hit are those living on fixed money incomes or having investments in enterprises like public utilities, whose rates are legally fixed while their operating costs rapidly advance. Little sympathy will be wasted in war time upon the more well-to-do so "hit," but perhaps the smaller fry, the beneficiaries of small life insurance policies and other "widows and orphans," do not deserve such treatment.

Who, then, does gain what the government and these other classes lose? Presumably the bulk of it is absorbed by the banks as interest upon an abnormal volume of loans,[4] by manufacturers of war specialties, and, most of all, by extractors of raw materials, such as farmers and the producers of coal, copper, and iron ore.

If the government also benefited by this virtual taxation of the many for the benefit of the few, it might be considered a shrewd political trick of shifting to the business man the odium incident to a state gain. But since the government commands no more funds than it might get by paying higher interest and by forbidding the banks to increase radically the net volume of their loans, and since it actually loses by the failure to do so, its policy must be charged to sheer fiscal stupidity—that and nothing else. The

[1] Of the liabilities thus created, about $480,000,000 issued from May, 1915, to November, 1916, were represented by "treasury notes" issued through the banks (*Econ. Journal*, December, 1916, p. 436).

[2] National City Bank, *Economic Circular*, March, 1917.

[3] Cf. *Atlantic Monthly*, July, 1917, p. 19.

[4] Cf. *London Economist*, October 28, 1916.

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issuance of a volume of fiat money equal to the amount of loan expansion would have no more serious effect upon prices and would at least "save" considerable interest. Of course this is not an argument for fiat money.

The tax policy, on the other hand, avoids any such expansion by *avoiding the occasion* for it. It might, indeed, make as heavy demands upon the masses. But whatever levies it made would be "open and aboveboard" and would not promote "profiteering" at a time when that is least defensible. It would, indeed, put more of the ultimate burden on the wealthy than does the bond policy, even if that did not give rise to price-raising. For the normal surplus of income over the cost of necessities is for the poor and the middle class quite limited in any one year and quite inadequate, during the period of a war, to the governmental needs of that period. Under either policy the huge remainder must be obtained from the wealthy; but the loan method permits them to recover a considerable portion of their present contribution out of taxes on other classes spread over a longer time and therefore more "productive."

And this is the only advantage to the wealthy in the bond policy as against present taxation. For if it were certain that the various classes were to bear the same shares of the total burden under either method, then there would be *virtually no choice* between the two for any of them. Bondholders would then merely take out of one pocket in taxes as much as they put back into the other pocket in interest and repaid principal. But in actual practice bonds are quite likely to mean, as Professor Davenport remarks, "a mortgage of the masses to the classes." A mortgage payable in instalments is for the former preferable, of course, to starvation taxes at one stroke. Whether they should be subjected to either is a different question which will be considered presently.

III

Our next concern is with the various criteria of choice between taxes and loans as predominating elements in the financial plan. These are conveniently brought out in a review of objections made to the taxing method.

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Perhaps the most time-honored of these is the plea that the tax plan would break all historic precedent. Past practice has always favored loans and even today England raises but 17 per cent of war expense from the proceeds of new taxes (fiscal year 1916–17).[1] Unfortunately, the past is often as illustrious for its blunders as for its proverbial wisdom. So, while custom is not to be flouted gratuitously, neither is it any bar to practices suggested by constructive imagination as the better alternative.

A second minor objection is that "excessive taxes on incomes will deplete the surplus available for investments" in government bonds. The same thing might be said of any income tax whatever as well as of most other forms of tax. But the obverse of this statement would be equally forceful—government bond investments deplete the funds available for taxation. Both statements of the single fact are equally irrelevant.

Again it is urged, notably in Congressional debates, that posterity will share the "benefits" of this war and should therefore share the burdens. It has already been shown that, if we consider the nation as a whole, posterity cannot possibly share the burdens. And unless the future peace is based upon the overthrow of the Teutonic dynasties and the expropriation of their supporting classes, upon international free trade and international control (not merely restriction) of armaments and regulation of the exploiting of "backward" countries, and upon adjustments of boundaries and of reparative payments which shall not embitter the Teuton masses, its "benefits" may not last over fifteen years and may be only the prelude to another world-war. That is certainly doubtful warrant for "deferring burdens," even if the argument were otherwise sound.

Another objection, more familiar in the criticisms of economists (notably Professors H. C. Adams and Bullock),[2] concerns the merits of taxation, not after the first year or two of war but during that transition period. This is the "dislocation" argument, the gist of

[1] E. R. A. Seligman in *New York Times*, May 31, 1917.

[2] Henry C. Adams, "Financial Management of a War," *War Finance Primer of the National Bank of Commerce*, p. 55; Charles J. Bullock, *Quarterly Journal of Economics*, May, 1917, pp. 367, 379.

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which is not that the tax method causes a more rapid and complete shift from peaceful to warlike activities (although that may be an undisclosed truth), but that in this shifting process it is more disturbing to those who have *already pledged future income* to certain purposes. It is alleged that taxation thwarts more hopes and forces more abandonment of contracts—the "psychic burden" is the point emphasized.

Upon what assumptions, however, will the bond plan be acceptable from the standpoint of war efficiency? On condition, first, that the great bulk of committed income is pledged to industries vital to military support, and, secondly, that the owners of uncommitted income will actually invest in the desired volume of government bonds. But there is no evidence for either of these propositions. The bond plan may allow an undesirable investment of both committed and uncommitted future income in nonessential industries to the detriment of war preparations.

And furthermore, the difference between the plans in disturbing effect is not what it seems at first blush. For the optional cancellation of pre-existing contracts affected by war conditions might be made a legal part of the tax plan, in which case the "inconvenience" would be thrown back upon producers of goods in the less specialized forms better adapted to alternative uses and therefore disposable as a rule under new contracts. And again, in so far as the bond plan inflates prices, it "disturbs the calculations" of the fixed-income classes by lessening either their consumption or customary savings or both. It also disturbs any commitments based upon anticipated control over popular savings which unexpectedly shrink as a result of inflation. Therefore "dislocation" neither is a prime concern to the public financier nor is it necessarily any more of an evil in the tax plan than in the bond method.

Another argument quite akin to the foregoing is stated thus by Professor Seligman: "The pay-as-you-go policy . . . . puts a *crushing burden* upon the taxpayers in the particular year when the [extraordinary expenditure] is made,"[1] whereas, according to Professor Adams, "When a government gives bonds in return for capital, the individual who supplies the capital does *not feel the sense*

[1] Cf. citation above.

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of personal loss which attends the payment of a tax. He has merely changed the form of his property."[1] That is to say, *he does not feel the loss now.* And by inference the whole nation has no such feeling of immediate burden as it otherwise would have.

On what assumption will this be true? If the future distribution of bond-canceling taxes were known in advance, it would be true only on condition that those slated to bear the brunt in future could not now feel that sense of sacrifice which those who have the means and must necessarily pay the present cost would now feel if they expected no repayment out of taxes levied on other classes. For if bondholders expected virtually to have to take out of one pocket in taxes as much as they would put back into the other pocket as interest and repaid principal, then bonds would lose their charm to all who are at least moderately rational.

In practice, however, the future apportionment of debt-canceling taxes is not usually foreknown (except as to tax-exempt provisions when inserted in bonds). Here, then, the conditions under which the argument would hold are, first, that the rational element among the bondholders should expect other classes to pay the bulk of the debt to them; secondly, that the rational element among these other classes should not expect to do so; and, thirdly, that the irrational element who must otherwise be hit by present taxation are very numerous. This last condition is doubtless quite unreal because the rich and well-to-do, from whose incomes war taxes could chiefly be drawn, if it were so desired, probably number an exceptionally high percentage of forethoughtful individuals.

As for the other two conditions, the fact is that war bonds usually mean, in the words of Professor Davenport already cited, "a mortgage of the masses to the classes"—and, to a much lesser extent, to themselves. All the small bondholders hoping for a net reimbursement are therefore deceived, although no more so than the rational element among the non-bondholders who expect to escape reimbursing the large bondholders, if any of them really do so expect. In so far as the masses (whether bondholders or not) fail to visualize the future, they are soothed only by an ignorance which it is not very exalted policy to exploit. And to forethoughtful

[1] Cf. citation above.

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bondholders the bond method offers no solace *unless it either* (1) *tacitly deceives them, or* (2) *promises them future benefits at others' expense.*

Whatever added mental comfort the bond plan secures is therefore discredited by the price paid for it. Nor is it an uncompensated gain *even in the present.* For in so far as the bond plan hits the small fry among the fixed-income classes by expanding bank loans and inflating prices, their intense privation is an important offset to the soothing of bondholders.

And if in the "calculus of utilities" the net result may be termed a gain, it is that *only temporarily* and not for the whole period over which bond extinguishment is spread. For, as time drags on, the shortsighted and deceived classes of taxpayers undergo compensating hardships, which under the usual conditions are often of an intense sort, because of the meagerness of many incomes so drawn upon.

Therefore the "reduced-burden" argument for bonds not only presupposes deception, but, whatever unimportant truth it may contain, is valid only as regards a limited time or a given class of people (notably the rich and well-to-do) and not as regards the whole time and number of people affected by war financing. For which reasons the argument is quite inconclusive.

However, the first consideration to most economists and business men nowadays is the growth of the supply of capital goods, and to such of them as criticize the "pay-as-you-go" plan on this score that criticism is the weightiest objection.

There are two minor variations on this theme, of which the first is the familiar argument recently voiced by Mr. Otto Kahn, that the taxing method would cause "expatriation of capital." This claim refers, of course, to the current flow of income, past accumulations being already invested in forms which cannot as a rule be exported. And its weakness lies in the facts: (1) that, even if they expatriated themselves, owners might be made to pay taxes here upon that flow when first received as "income" from this country; (2) that self-expatriation and removal from the United States would be necessary, in order to escape taxes here on returns from foreign investments; and (3) that, whatever foreign tax rates may be

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today, there was never more uncertainty as to what they will be tomorrow or the day after.

The second minor objection is that heavy taxation would cause "capital to go into hiding." If this refers to failures to report current income, the difficulty may be largely obviated by administrative efficiency, and the country will not be poorer anyway for the income successfully concealed. If it refers to refusals to reinvest income, the obvious reply is that it would be less profitable to bury one's talent and to get no returns from it than to invest and get a positive return, however diminished temporarily by taxation.

The major objection, however, is that the "pay-as-you-go" policy would *impair the incentive to effort* more than the bond plan—presumably this is what is implied in Professor Seligman's statements that "to abandon the use of credit is to revert to primitive economic conditions and to lessen social productivity" and that ". . . . the tax-only policy would require more than the total surplus of social income,"[1] for there is no other explanation for either. Now there are several reasons for doubting that theory.

In the first place, if we assume that considerations of gain are the chief motive in war as well as in peace, it may be that current taxation would force an *economizing rather than a relaxation* of effort, i.e., through the adoption of "scientific management" in private production—this being relatively easy in times when, as now, the demand for labor is greatest.

Secondly, the effect upon incentive depends largely upon the *kind* of tax chosen. Comprehensive taxes on competitive production may perhaps be a serious deterrent, if there is no escape through greater efficiency. But not so with rapidly progressive income taxes, taking very great portions of the upper ranges of large incomes, provided the rates be graduated so as to leave the recipient substantial (although diminishing) remainders from each successive portion of his income. The possibilities of such a non-relaxing form of tax have doubtless never been more than "scratched" hitherto.

[1] Cf. *New York Times*, May 31, 1917.

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And finally, there is an added sustainer of effort in war which peace times do not commonly afford, namely, patriotism. Of course the sacrifices which this may prompt are limited by the elementary requirements of life, and therefore the wealthy may do more from this motive than other classes can. Their professions recently have been positive and no doubt sincere. There is therefore no reason to expect them to be "slackers" under very heavy taxes in war time, even assuming that scientific tax forms would so prompt them in ordinary times. In so far as taxes are a deterrent at all, that fact is a caution against leaving a legacy of debt to be paid off in normal times, when the motive of patriotism is absent, rather than against severe taxation in war time.

From the standpoint of industrial stimulus, then, it may well be that the "pay-as-you-go" method is preferable to its alternative in the retrospect of times after the war and is equally desirable meanwhile. But a second factor bearing upon the capital goods supply is fully as important, namely, the volume of *private consumption*.

On this score a very ingenious theory has been advanced by the National City Bank of New York, which, because of the bank's influence in certain quarters, deserves detailed examination. Under the heading "Savers and Spenders" the bank divides society into two groups, the majority among both rich and poor who spend all they get under whatever conditions and the minority, likewise scattered among all social classes, who save, and the argument runs tacitly as follows:[1]

The standard of living of the savers is rigidly fixed, for, as the bank states elsewhere, "under no conceivable circumstances will taxation encroach upon the portion of [their] income which is devoted to [their] own support."[2] But the standard of the spenders (including by inference a majority of men of enterprise) is quite flexible and may be substantially reduced by taxation even in peace times *without relaxing* their will to work (otherwise the forthcoming conclusion as to a net capital gain might not hold). Therefore, says the bank, all taxes upon the savers represent a loss to the capital fund unless returned to them in the guise of interest and principal

[1] Cf. *Economic Circular*, May, 1917. [2] *Ibid.*, June, 1917.

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on money received from them as loans. And all taxes on spenders represent a gain to the capital fund by furnishing means toward repaying the savers as bondholders.

So far so good, but the conclusion does not go far enough. For the rest of it is this: the more that spenders' waste is shut off now by taxation, the *less funds must the savers supply* now (whether as taxes or loans or both) to meet a given government expenditure. *Thus all savers' contributions whatever represent a loss* in capital, at least a temporary loss and an unnecessary one, in so far as the funds might have been obtained from the current income of spenders instead.

From the capitalistic standpoint the ideal policy would therefore be to tax spenders "to the bone" and let savers go free or only borrow from them. But the bank would concede that to be impracticable and doubtless too severe a case of "taxing for social purposes," which financiers usually frown upon.

The next-best arrangement would be to tax both spenders and savers "to the bone." By putting the maximum present burden on spenders, that would make the minimum demand on savers. True, the latter would pay more taxes than under the bond plan, *but less in taxes and loans combined;* and to that extent they would have more for private investment. But, since by admission the spenders include a majority in all income classes, this result could be achieved only *by combining heavy income taxes* with whatever consumption taxes were thought tolerable.

The bank, however, favors relying chiefly on consumption taxes and loans, which would deplete the current capital supply by every dollar of the larger spendthrifts' income allowed to go to waste. Would this loss be more than made good after the war? Not unless the spenders were to pay a larger fraction of the long series of taxes out of which war bonds were canceled than they would pay of the shorter-lived and more severe taxes under the "pay-as-you-go" plan. But that is contrary again to the assumption that spenders form a majority of every income class. Therefore on its own hypotheses the bank's plan would no more than tardily make good after the war that unnecessary present loss of capital which it would entail.

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And furthermore, it would make it good *more largely out of humble spenders* than under the alternative plan. "Paying as you go" would put a more effective stop to spendings on jewels and art, grand opera and cabaret, pleasure automobiles and power boats, palatial residences and hotel accommodations, winter vacations in California and at Palm Beach, valets, footmen, and the hundred other functionaries of ornamental personal service. Whereas the bank's program would for a much longer time shut off a narrower range of expenditures on dispensable articles of food and drink, cheap amusements, cheap ornaments, and other "luxuries" of the masses.

The chief objection, however, is not to the bank's failure to perceive all the conclusions latent in its premises, but to the invalidity of those premises themselves. In the first place, there is no warrant for assuming that taxation in peace times will not relax effort and so retard the labor and managerial sources of new capital. And secondly, the inflexible standard of living attributed to all savers is doubtless true only of an insignificant number within that group. It cannot be said that the net amount of bond payments made to the great majority of them in future will not increase their spendings and so will all be "restored . . . . to the capital fund," or that current taxes will not reduce their war-time consumption at all.

The truth seems rather to be that the consumption of everyone is elastic, but that the different fiscal methods are not equally successful, as Professor Sprague has so forcefully urged, in bringing home the need for thrift. If buyers of government bonds realized the physical unproductiveness of the investment and also expected future taxes to make it financially valueless to them, then self-interest or patriotism or both might move them to economize as much as severe taxation would. But the very thing that makes the bond plan seem less "burdensome" during war is also the foe to economy, namely that ignorance of or hope of escaping future tax burdens to which reference has already been made.

The superiority of the tax plan in checking consumption therefore seems incontestable. Even if we assume this to be wholly offset by its alleged effect in relaxing effort, the result would be no less favorable to the capital supply than under the bond plan, either

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at the end of the war or in after years. But in so far as patriotism is a war-time substitute for gain as a motive and as certain forms of tax are not deterrents anyway, these factors make for better *immediate conservation* of capital under the "pay-as-you-go" plan—a conservation, moreover, without such extreme hardships to the small fry among the fixed-income classes as result whenever price increases follow in the train of inflated bank loans under the bond method. So much for "the goose that lays the golden egg."

A final objection is that taxation "dries up the sources of charity and educational endowment" more than borrowing does. The extent to which this is true depends, of course, on whether benefactions are exempted in the income-tax law—philanthropists will naturally give away more untaxed than taxed income.

But if we admit that the claim is true as to private sources, what of it? "A man having a national reputation in civic work states that the number of very wealthy who systematically support reform or charitable movements is probably *not more than 5 per cent* of the total of that class."[1] Therefore if there is no exemption of gifts in the law and if all incomes are only moderately taxed in order to spare the 5 per cent, then the 95 per cent are encouraged in wasteful consumption and either the capital supply or the popular consumption of "necessities" suffers, or both do.

The tax policy, on the other hand, if it temporarily cuts down the gifts of the charitable, *also provides the means for public subsidies* to indispensable agencies (like the Red Cross) out of taxes on both the charitable and the uncharitable. All that severe taxation necessarily "dries up" is the self-gratulation of benefactors. If it also cuts down luxurious consumption and nonessential charities, that is just what furthers the supreme end in war time.

IV

For the foregoing reasons the taxing policy seems preferable from the standpoint of the economic and cultural interests of a nation as a whole rather than of small groups thereof. But in the present instance the administrative machinery hitherto sufficient for peace needs would not be immediately adequate for the demands

[1] *Equity* (Philadelphia), July, 1917, p. 134.

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of multiplied war taxation. For this reason alone a resort to bonds is necessary as an emergency measure.

For how long should such bonds run? And, which is a more important question: should these obligations be exempt from tax or not? Unless exemption secures some peculiar benefit to the government and better conserves the capital supply, the presumption is against it.

On behalf of exemption it is urged that that policy makes it easier to secure the desired volume of public loans. That is quite untrue. Ease of flotation depends simply on the interest rates offered in the respective cases, and a given volume of non-exempt bonds will sell as readily as if they were exempt, provided the difference in rate is sufficient.

It is urged, however, that exemption yields some net saving in interest costs to the government. Now if all lenders were subject to the same rate of income tax, that claim would manifestly conflict with the whole theory of capitalization, which holds in brief that the allowance of any future tax immunities is compensated by the beneficiary's payment in a lump sum of the "present worth" of such advantages, *in so far as they are assured at the time of bond purchase, and no more.* Suppose, for example, that the proposed issue of war bonds could be floated non-exempt at a price yielding the investor a *gross* interest return of 3.6 per cent before deducting taxes. Suppose also a flat income-tax rate of 3 per cent on all investors' incomes. This would mean an annual deduction of about $\frac{1}{35}$ of their interest receipts or .1 per cent of the principal, leaving 3.5 per cent as their *net* interest return. It would, then, be immaterial to them whether they paid a price yielding 3.6 per cent gross interest or, if the bonds were exempt, paid a higher price yielding 3.5 per cent net interest, and for the same reason it would be immaterial to the government.

Unfortunately for our calculations, the case is not so simple as that, because bond-purchasers will include investors paying all the way from no income tax at all up to a considerable portion of the higher ranges of individual income. And moreover, the supertax rate is not the same for all portions of a given income, but increases for the successive portions as the income itself increases in size.

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Tax exemption therefore is a great boon to some investors while none at all to others. And owing to the fact that under our present law exempted income is *not reported as income at all*, exemption saves the wealthy the very highest rates they would otherwise have to pay, on the amount of their bond investments, as the top portions of their incomes.

Now the demand for bonds by these wealthier income taxpayers would of course be increased by the exemption feature and would tend to raise the price of bonds paying a given nominal rate and thus to lower the resulting rate to the investor. But how much would it do so? That depends on how much of an impetus the exemption gave to the original demand of the wealthy (at the expense of investments in private industry), upon how sensitive those classes not benefited by exemption were to diminished returns, and thus not only on the *extent to which the wealthy displaced the humbler classes* in the government bond market but on the competition they met with in so doing. It is not a question, as some economists have intimated, of the make-up of the bondholding class as regards either the *total* numbers from different income classes comprising it, or the amount of their respective class contributions. It is a question rather of: (1) the number of "*marginal purchasers*" within each income class who are stimulated (or indirectly deterred) by exemption, (2) *their responsiveness* to exemption, as indicated by the increases or decreases in their purchases attending a given change of interest rate, and (3) the *potency* of these sensitive purchasers in the market for non-exempt bonds—i.e., the ratio of their savings to the savings of all purchasers.

By exemption, then, the government would gain the amount of increase in bond prices paid by those not subject to income tax (their number being fewer and total purchases smaller than if there were no bond exemption to increase the competition of the well-to-do). And, if prices went high enough, it might also gain more from the lower class of income-tax payers than it lost by forfeiture of their future taxes, the number of such purchasers being likewise diminished by the increase in price.

On the other hand, it would neither gain nor lose by the purchases of the class whose incomes were of such a size that their

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increased price contributions merely offset their future tax exemptions (the number within this class being presumably least affected by the change of method). And it would lose the difference between the sum of price-increases paid by an augmented number of the wealthy and well-to-do and the greater amount of future taxes from which they were freed.

What would be the net result? One man's guess is as good as another's, *provided* both are equally disinterested. The writer would certainly not beg the question, as did Mr. Victor Morawetz,[1] by first guessing that the exemption plan would raise prices enough to reduce interest cost one-eighth (i.e., from 4 per cent with no tax exemptions to 3½ per cent under exemption) and by then arguing that the taxes forfeited would probably not equal that fraction of the interest which must otherwise be paid out under the non-exemption plan. The flaws in this argument seem to be, first, that price-increases probably have a *much more discouraging effect* on those among the humbler classes who would otherwise be bond-buyers than Mr. Morawetz assumes; and hence these increases and the resulting saving of interest to the government are not as substantial as claimed (cf. Professor T. S. Adams' testimony on the experience of private corporations in dropping tax-exempt guaranties).[2] And secondly, the government loses in addition whatever *future increases in income taxes* are not contemplated at the time of bond sale, and so are ineffective (as Professor Seligman has well pointed out) in stimulating the present demand of those benefiting by exemption and in raising their price offers.

To the government therefore there is not the slightest assurance of gain as a motive for relinquishing future taxing rights, and as a deterrent there is the danger of very severe loss in case rates are subsequently raised. For the bondholders, on the other hand, there is certain gain to the very wealthiest, offset by equally certain loss to those among the humbler classes not driven out of the government bond market. The condemnation of exemptions by the economists mentioned is therefore amply justified.

[1] Cf. *New York Times*, April 17, 1917.

[2] Cf. *New Republic*, April 7, 1917, p. 293.

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There is, of course, no requirement in the language of the sixteenth amendment for the exemption of state and municipal bonds from tax any more than of federal bonds: "Congress shall have power to lay and collect taxes on income from *whatever source* derived," etc. All that is necessary to such taxation is a court respectful of the ordinary meaning of words as against the alleged self-contradictory intent of their framers.

It is, of course, too late to remove the exemption feature from the Liberty Bonds of June, 1917, but not to remove it from future bonds.

V

What forms of tax should bear the brunt of the burden under the "pay-as-you-go" plan? If the annual cost of American participation in the war and of any aid to the Allies not immediately paid for by them were all paid out of taxation, and if this cost should be so great as to equal the sum of annual pre-war capital accumulation plus wasteful consumption, then the answer would be easy—each major kind of tax hereafter to be mentioned should be "worked to the limit." But this is not the prospect at present (September, 1917).

The question therefore becomes: in which order and to what extent should the revenue possibilities of the various taxes be exhausted? And this is not to be determined by any dictum as to what portion of the war cost should be met by curtailed consumption and what portion by curtailed capital accumulation.

There are two reasons for this. In the first place, all these major federal taxes *curtailed both consumption and private investment*, and the proportions in which they fall upon the two are *quite unknown*. (Cf. the comment on the argument of the National City Bank in Section III preceding.) Banker I. N. Seligman in his June, 1917, report of the Committee on Taxation of the New York Chamber of Commerce said: "Emphasis should further be laid upon taxes on consumption, with a view of conserving for ourselves and our Allies all available resources of raw material and of finished product." If, as seems to be the case, his implication was that such taxes check waste and conserve capital more than severe excess profits and income taxes, then proof of that fact is in order. (This

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quotation is typical of thousands of statements in recent financial discussion which sin rather by what they omit and imply than by what they assert.)

But, secondly, even if the exact effect of these several taxes in checking waste or investment were known, the problem of how far to make each contribute toward the total shrinkage desired in either direction would still remain.

Therefore, so long as taxes do not absorb the whole social income above a subsistence level, the resort made to the different taxes must depend on considerations as to the distribution of burdens *between persons rather than between the categories* of waste and investment. This is obviously an ethical issue, toward the solution of which the writer knows no more helpful principle than "equality of sacrifice." He is well aware of the familiar objection that "there is no common denominator or outward measure of men's feelings" and hence no measure of the privation which any given distribution of money burdens will cause them. But an imperfect criterion, incapable of exact and rigid application, is *better than none at all.*

Applying this one, then, we find a very general agreement that sacrifices of the food, clothing, fuel, and shelter necessary to maintain physical vitality are more keenly felt than is the abandonment of the more refined forms of consumption, no matter how imbedded in habit these may be. Likewise inroads upon small savings are as a rule more grievous than proportionate inroads upon the larger surpluses, which generally represent much less privation in the "saving." Therefore the war financier's aim should be to levy upon small incomes and the essential articles of commonest consumption only as a last resort after exhausting the possibilities of all other less burdensome taxes.

VI

The least burdensome of all is the excess-profits tax—when "excess" is properly defined. This involves (1) a definition of "normal" net profits, above which the excess is to be reckoned, and (2) specification of the deductions to be allowed in finding total present profits.

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For concerns which have not added considerable new equipment to their plants as they stood in 1911 or 1912 "normal profits" may well be taken as the *average of actual profits* in the three or four years preceding 1915, with the same average allowance for depreciation, whether then correctly reserved or not (otherwise past neglect to deduct depreciation would inflate past profits as a basis for comparison if greater depreciation were deducted from present profits). For concerns which have added considerable new equipment in the past three or four years an arbitrary "normal" income must be imputed to that equipment. This is usually a fixed percentage of its *original cost.*

The chief controversies over deductions to be made in finding present net profits center around the items of depreciation and interest. The original House revenue bill of May, 1917, did not allow deduction of interest on business loans.[1] Nor did it allow for depreciation and obsolescence charges, although in industries using machinery purchased at inflated war-time cost and not adapted to alternative peace uses the latter charge would be considerable. Owing to the uncertainty of our military future, obsolescence charges are also extremely uncertain. The government is best able to assume such risks and should therefore provide all new war-factory equipment (as England has done in part) and lease or operate it as seems best. That would not only vastly simplify the administration of the excess-profits tax, but would remove the only basis for the present demand for low rates, the benefits of which now go to those whose risks are slight as well as to those who risk much. The increase in yields by the imposition of high rates would much more than pay the cost of the factory investments required, the result being great gain for the government.

There is now one other pretext for low rates, namely, that profits are taxed more than once whenever they are paid from one corporation to another (holding company) before distribution to individuals. The House bill of May, 1917, properly corrected this feature of the old law. But the Senate amendment which applies different rates to successive portions of a given excess seems clearly indefensible.[2]

[1] Cf. *New York Times Annalist*, June 4, 1917, p. 750.

[2] Cf. "Losing Our First Trenches," *New Republic*, July 14, 1917, p. 292.

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The English rate is now 80 per cent, and the adoption of the foregoing changes would wipe out all valid objections to a 90-per cent or even a 100-per cent rate here—except perhaps as regards the occasional instance of war-time transfers of pre-war equipment at prices much higher than its "normal income" would warrant. Such property might be taxed as new equipment or left to the discretion of an administrative board. But it represents the exception rather than the rule and should be treated as such, by whatever method.

Excess profits under the tax plan would of course be less because of the lesser expansion of bank loans, but still very formidable. The merit of a tax upon them as against the income tax is that the former may be made to *obtain a larger portion* of the excess than would be realized if this were first paid out to stockholders and then partially recovered under a schedule of graduated rates. And a flat 90-per cent or 100-per cent tax would yield several billion dollars per annum under present conditions (the more lenient English tax with a maximum rate last year of 60 per cent yielded $700,000,000).[1] The yield of slightly over a billion dollars expected from the Senate's September revision of the House bill is, of course, a mere fraction of what could be obtained, but is an improvement upon the recommendation of the Committee of the United States Chamber of Commerce that only $200,000,000 be taken from this source.

The next least-burdensome levy is the income tax. As regards this the chief controversies center around the rates of supertax and the amounts of exemption allowed.

It may be that revenue needs will compel a reduction of exemption allowances. But in order to equalize the sacrifices of taxation, which are now more grievous to the middle class than to the wealthy, the present and proposed supertax rates should be multiplied *before lowering the exemptions*. To take 95 per cent of the balance of all incomes over $100,000 and to multiply, say by six, the present rates on lesser incomes would doubtless still leave much revenue to be raised from other sources.

Against such supertaxes all the classic objections noticed in Section III are raised. And in addition Mr. Otto Kahn uses the

[1] Cf. E. R. A. Seligman, "How to Finance the War," *Columbia War Papers*.

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indefensible bond-exemption feature of the present law as the ground of another ingenious plea. He claims that the inducement thus offered the wealthy to invest in the Liberty Loan is so great as to require private borrowers to pay 8–10 per cent to equalize the net yield to such lenders, and complains that this will hamper private borrowing.

This of course is only half the story. As was previously seen, the low interest rates incident to tax exemption drive the "marginal" element of small bond-buyers out of the government bond market and into private investment, just as the wealthy are driven the other way. Doubtless these small fry (or the savings banks) will not furnish all the desired private capital at "tolerable" rates, but that cannot be had *at any rate whatever*, if the war is to be efficiently conducted. While Mr. Kahn and others likewise misguided think they are exposing a flaw in progressive taxation, they are really only proving that a nation cannot burn, blow up, and sink its surplus and have it too.

Even with excess profits taxed at 100 per cent the forementioned supertaxes would yield several billion dollars additional, and under a comprehensive system of reporting all disbursements to the government this sum might be collected with slight evasion and very moderate expense. On the other hand, the expense of collection would be multiplied by reducing the exemption allowances, not only because of the greatly increased number of taxpayers, but because, as Professor Seligman remarks, the American middle class comprises a peculiarly large proportion of farmers, a group especially negligent of bookkeeping and "refractory" toward income taxes.[1]

He estimates, moreover, that if the exemption limit were reduced to $1,500 for single men and $2,000 for families, the additional yield would be only $4,000,000–$8,000,000 for each 1 per cent of tax. War needs may justify such a relatively unproductive levy, although not under the supertax rates in existing bills. But there is no warrant for the expectation that the new groups of contributors will take any greatly increased interest in affairs of the federal government. Washington is too remote geographically from the average man, the Hamiltonian structure of government

[1] Cf. *Columbia War Papers*, Series 1, No. 7.

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too devious and complicated, and the general feeling of impotence toward it too vivid to remedy by tax doses.

Supertaxes are therefore vastly superior to normal taxes in fiscal productiveness, as well as precedent to them in ethical justification. But however the two are actually adjusted, the greater severity of war rates increases the need for several changes in permanent features of the law. Income should be defined so as to include the rental value of premises used by the owner and of produce consumed on the farm, and so as to allow deductions for losses "outside one's business" and for obsolescence, as well as ordinary depreciation, of property. From the disbursers of dividends and interest the government should require only "information at the source," collecting the tax from the recipients. And there should be an exemption allowance for each dependent child in a family, as well as for the parents.

No increase in the corporation tax is recommended, in order to keep double taxation at a minimum. For the same reason the taxation of the previously taxed income of holding companies should be abandoned. And in order not to put special penalties on the accident of death within the war period, there should be no special tax on inheritances.

Third in the order of choice for war purposes and in yield the writer would put consumption taxes, using that term in the broadest sense. The particular levies should be chosen with a view to conserving the vitality of the masses, to leaving them scope for normal emotional expression (e.g., through family life and cheap amusements), and to making it possible for those who were hitherto small savers to continue saving and keeping "a stake in the country."

To that end the heaviest special taxes should be upon liquors and tobacco, upon pleasure automobiles and automobile accessories (notably tires and gasoline), and upon many of the indulgences of the wealthy, such as jewelry, electric piano players, club dues, opera, and cabaret. Of such taxes those which hit the most people—namely, excises on liquor, tobacco, and oil—were foremost among Civil War sources of revenue, as the list given by Professor Seligman shows. But that list shows no tax on food products, such as was recently proposed for tea, coffee, sugar, and cocoa. An excise

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of a cent a pound on domestic sugar would fall primarily on producers well able to stand it, as long as the sugar tariff is retained, and should be imposed as a compensator thereto. But otherwise these food taxes, along with those on transportation, retail light and gas bills, and the cheaper amusements should be utilized only as a last resort.

In the light of the foregoing the Senate proposal of September, 1917, to tax tobacco and liquors $264,000,000 is quite acceptable, and likewise the automobile license tax (to yield $40,000,000) as far as it goes. But a revision which multiplies the former corporation tax while anticipating only $300,000,000 from individual incomes, which rejects the House proposals to tax jewelry, automobile tires, and club dues, and which levies upon transportation (freight, passenger, express, and parcel post) for nearly $160,000,000 is equally to be regretted. There need be no regret, however, that in this latest Senate revision the recommendation of the committee of the United States Chamber of Commerce, to levy $550,000,000 in excises or the equivalent, was not carried out. The moderate levies proposed for excess profits and individual incomes are not sufficient to justify that.

It is true that severe taxes on these latter sources would require a more expert administration than levies on consumption, and a much more extensive and efficient one than the present schedules require. But with the help of such organizing genius as has recently hurried from private life to the aid of other departments in Washington, agencies fully competent to the task might be in smooth working order in the course of the next several months. Professor Seligman's fear that under the "pay-as-you-go" plan the machinery of taxation would break down would then be in no danger of realization.[1]

VII

Another phase of the subject which raises ethical considerations is the share of war costs which the United States is to assume. Obviously this need not be limited to the expense of equipping, transporting, and maintaining our own troops. On the other hand, warrant for so doing might perhaps be found in a study of the

[1] *Columbia War Papers*, Series 1, No. 7, p. 13.

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contributions of the Allies to the underlying causes of the present war together with the dubious character of their "terms" as foundations for future peace. Any pronouncement on the international distribution of burdens would be out of place here and is not attempted.

But so long as the United States does actually refuse to give outright to the Allies all that they cannot or will not contribute from their own national incomes toward war costs, the question remains how are they to pay for the supplies we do not contribute free. They can do so only by giving us claims on future income, in the form either of (1) title to specific property represented by private securities, or (2) a general promise to pay such as their government bonds contain. And in either case such claims could be delivered direct to the American capitalist, as the Allies did with the investments of their own capitalists earlier in the war, or to our government as the general representative and guarantor of the American capitalist, as is now being done.

Are both kinds of payment still possible? Within certain limits, yes. French and English capitalists in 1914 held at least $6,000,000,000 of securities issued in the United States alone, of which probably not one-half has as yet been sold here as one means of paying for past purchases. It is true that part of the unsold portion is now "tied up" here as collateral for loans to the Allies, and another part is in American safety vaults as a means of preventing its forced surrender to the Allies' fiscal authorities. But international comity might as easily force surrender of British-held securities in the United States as it threatens to conscript British subjects here, the unpledged securities both here and abroad might be sold here and the proceeds used to pay off the collateral loans, and the collateral so recovered then sold in turn until not a dollar of American securities was owned abroad. Furthermore, there are hundreds of millions, if not billions, of Allied investments in Canada and South America which are so "gilt-edged" that they might likewise find a market in this country and help materially to swell the total of Allied credits here. Probably a total of four or five billion dollars could be realized by such sales of both North and South American securities.

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Which kind of payment is preferable, then? The liquidation of foreign holdings in America is preferable because it avoids the danger of repudiation latent in foreign government bonds, which, if it transpired, might force reprisals by the cancellation of foreign titles to United States securities and their distribution pro rata to our capitalists injured by such repudiation. Let no one be deceived as to the seriousness of that danger. As Professor Alvin Johnson remarks, future events are quite possible under which "we might as well prepare to write off to total loss the three billions and the billions we may lend in the future. At any time in the next three decades let war clouds grow heavy over Europe and every income-tax payer in the United States may as well prepare to economize" (i.e., to make good the Allies' permanent default).[1]

Of course a total liquidation of Allied holdings would work an inconvenience, if not a loss, to foreign capitalists as against paying with the "I.O.U.'s" of their respective governments, but tenderness toward foreign capitalists should hardly be the first consideration in American statesmanship. If it is right that the Allies should do more than pay what they can or will out of current income, it is equally and highly expedient that they should do so by relinquishing American securities as long as these last. The war will bequeath future troubles enough without our borrowing any unnecessary ones.

But, after exhausting that source of payment, the Allies might still be debtor to us and have only their government notes and bonds to give in settlement. In the last analysis these must be purchased by our capitalists. The only question is whether our government should assume liability for repaying our capitalists if the Allies "welch" on their obligations later. It is now assuming such liability by borrowing billions to invest in the "I.O.U.'s" of the Allies. If our taxpayers were being compensated for the risk thus thrust upon them and if the liability of each taxpayer in case of Allied default were equitably determined now, then there might be some excuse for this unheard-of exploit in governmental underwriting. But not only is there no such compensation for risk, but in case of repudiation and loss an inequitable distribution among

[1] Cf. *New Republic*, May 5, 1917, p. 12.

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taxpayers is almost certain. And the loss would be as much of a surprise to most of them as the risk had been previously unknown.

It is highly desirable therefore that the Allies should borrow any deficits from our capitalists individually. True, that would require payment of interest commensurate with the risk now thrust on the American taxpayer, instead of a rate made abnormally low by exempting government bonds from taxation. But, let us repeat: tenderness toward the foreign taxpayer should not be the first concern in American policy.

It may be urged, however, that the credit of the Allies is now so weak that they could not borrow enough here privately to cover their periodic deficits. If that assertion be proved true by the failure of actual attempts to do so, then the situation calls for either more drastic taxation by them to improve their credit or the outright payment by us of a larger share of the costs of war. But for the reasons already cited that larger share, if accepted, should be raised by current taxation and not by borrowing.

The present plan of loans to the Allies errs, then, in not relying upon taxation for such aid as our government chooses to give them and in not requiring them to finance any remaining deficits with funds obtained direct from our capitalists, through the sale either of private securities acceptable to the latter or of bonds of the Allied governments. As Professor Davenport intimates, our foreign loan is one of the most dubious features of the whole financial plan.

VIII

Reviewing, now, the practical conclusions to which the foregoing argument has led, they may be briefly summarized as follows:

1. Measures which aid the financier indirectly are regulation of private expenditure (e.g., by "rationing" and censorship of capital investment) and stoppage of public improvements. Regulation applied to consumption requires such elaborate administrative machinery as to be practical only as regards the great "staples."

2. Such regulation coupled with control of exports largely obviates the need of price control, which, however, may serve a fiscal purpose in the case of government monopolization of various distributive lines for profit.

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3. Except in so far as it is necessary to borrow to cover temporary deficiencies while administrative machinery is being perfected and returns collected, the cost of American participation in the war should be paid only from tax receipts or from government profits in distributive activities.

4. The bonds representing such emergency borrowings should run for a period of not over ten years and should not be exempt from tax.

5. These bonds should be offered at a rate of interest sufficient to secure their purchase by private investors. Commercial banks and trust companies should either be prohibited from buying the bonds of any government and from lending money to individuals for that purpose or should be required to diminish other assets to the same extent as they made such loans.

6. With the definition of "normal" profits and of deductions from current gross profits as above outlined, there should be a flat excess-profits tax at a rate approximating 100 per cent.

7. Under the individual income tax the war rates upon the larger incomes should be multiplied progressively until 95 per cent of all portions of incomes over $100,000 is taken. This should be the prerequisite to a lowering of the exemption limits. The extent of such lowering and of the new "normal" (minimum) rate of tax should depend in turn upon the severity of consumption taxes imposed.

8. The prerequisite to added consumption taxes upon the masses (other than as to liquors and tobacco) should likewise be the drastic taxes specified above, upon excess profits and incomes, and also heavy taxes upon luxuries.

9. Any non-military aid rendered the Allies by our government should take the form of a gift paid out of the proceeds of taxation. If that is not enough, the balance should be obtained from our capitalists individually through the sale either of private securities owned abroad or of bonds of the Allied governments.

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TAXATION VERSUS BOND ISSUES FOR FINANCING THE WAR[1]

The controversy which has been raging between the advocates of taxation and the advocates of bond issues, as a means of war financing, results in part from lack of clear thinking and in part from the conflicting interests of individuals and classes. Confusion of thought is probably the principal source of conflict. There is no economic subject as to which fallacies are more widespread and deep-seated.

We shall clarify our thought if with some precision we consider, first, the sources from which funds for war expenditures can be drawn. It should be observed that this inquiry comes substantially to the same thing as an inquiry regarding the sources from which the labor and the commodities for war uses can be obtained. What the government needs for war is not money, but men and goods.

The only important source of funds for war expenditure consists of the surplus of current income—the excess of the income of the people above their other expenditures during the actual war period. This, again, is the same thing as saying that it is chiefly by the diversion of the current productive power of the nation to war channels that the war must be provided with men and supplies. The surplus of income represents the surplus of labor performed and commodities produced during the war which are not used for non-war purposes.

A surplus of current income available for war expenditure may be obtained in three ways: first, by an increase of production through speeding up; secondly, by saving in consumption; and thirdly, by reducing the investment of new capital in non-war enterprises.

[1] Presented before the conference of the Western Economic Society and the City Club of Chicago, June 21, 1917.

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There seem to be those who suppose that the entire burden of the war can be carried by speeding up production and increasing its efficiency. The slogan of "business as usual" implies this idea. We have been told that there is no particular need of economy in consumption except of food; and, also, that the nation ought not to slacken its investment of capital during the war, but ought, if anything, to increase such investment in order that it may be better able to compete in the markets of the world when the war is over. Most of those who have taken these positions are simply resting on fallacy. They think that one can eat his cake and have it too. Some of them, however, honestly believe that the productive power of the country is normally far below its possible maximum and that it is capable of vast expansion under stimulus.

It is true that a considerable expenditure of an unusual character may be taken care of by speeding up production. In ordinary times a great deal of labor and capital are wholly or partly idle or are working with comparative inefficiency. The new demand for production created by the war tends to keep all labor and capital busy and puts pressure on them to increase their efficiency. But we must remember that industry in the United States has already been speeded up materially in the last three years because of the demand for war supplies to be shipped abroad. While additional increase in production may be achieved in the same direction, the limits are probably not wide.

There can be no doubt that, if our own war expenditures—aside from what we supply to the Allies—become, as they easily may, equal to a quarter or more of the present national income, increased efficiency of production will fall far short of meeting them. It will be absolutely essential for us both to save in consumption and to reduce materially the annual investment in new capital.

It is evident that even the poorer classes of the community can, if put to the necessity, save considerably in current consumption, while the more well-to-do could reduce their consumption by a very large fraction. That the people must save, if they are to pay war taxes or to buy war bonds in large amounts, really scarcely needs argument. The fallacy of "business as usual" during war is

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kin to the old fallacy that extravagant expenditure creates demand for labor and is good for the people. Saving in war time is a patriotic duty.

It has been estimated by the National City Bank that approximately $5,000,000,000 of the annual income of the country is in normal times devoted to new investments. It is a familiar fact that many persons of large income invest annually from half to nine-tenths of their income. Much as we should prefer not to check our industrial progress, we must remember that the very fate of all our past investments—indeed, the fate of the nation itself—is at stake in the war, and that, purely from the material standpoint, it is good economy to spend what is necessary to save them, even if we temporarily forego industrial expansion. It is probable, in fact, that the largest one source of funds for the conduct of the war will have to be found in the diversion of that surplus income which ordinarily goes into investment.

Sources of war revenue other than the surplus of current national income are, for the most part, either not available for the United States or comparatively unimportant.

In the first place, it is evident that a war might be financed in part by the accumulation by the government of great quantities of munitions and other supplies during previous times of peace. That means preparedness. That our government has done very little in this direction is all too obvious.

In the second place, a war may be financed to some extent by borrowing abroad, by securing the surplus of the income of foreign countries on promise of repayment out of future income of the home country. It is obvious that the United States could not now, if it would, use this means of war finance; on the contrary, it is under the necessity of itself lending heavily to its allies.

In the third place, some writers lay considerable stress on the thought that previous accumulations of private capital may furnish an important means of war finance. Professor Seligman, for example, in his recent brochure, *How to Finance the War*, suggests that there may be a large loan fund in existence, the accumulated profits of recent years which have not yet been invested, the use of which in payment of subscriptions to the loan involves simply

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a change of investment from private enterprise to government service.

This suggestion rests in considerable part on a confusion between individual economy and the economy of society as a whole. There is not at any one time a very large uninvested surplus of previous income. The individual may have a large amount, say, of last year's income deposited in a bank or invested in a temporary loan. He expects to withdraw the deposit or to collect the loan later and to make a more permanent investment. For him it is an available surplus. Meantime, however, the money is being used. It is represented by fixed or circulating capital in the hands of borrowers from the bank or from the individual capitalist. If the owner of the surplus income withdraws it from the bank or from the loan to buy government bonds or otherwise finance the war, the borrowers must, primarily from the surplus of their current income, repay what they have borrowed. Current income must, for the most part, foot the bill.

Again, Professor Henry C. Adams suggests that, while we cannot convert fixed capital into war supplies, it is possible to do so with circulating capital. Such a process, however, has very narrow limits. Circulating capital, in the last analysis, consists essentially of partly finished products, of stocks of finished consumable goods, and of finished capital goods of certain kinds not yet actually in productive use. The total of such products and goods in the country at any one time probably represents only a fraction of one year's income. Many of them are not adapted to war uses. Besides, only a comparatively small part of them can be dispensed with. They are, in the main, a part of the necessary means of conducting business. At the utmost, it would scarcely be possible to finance more than part of the first year of a war through the use of previously accumulated circulating capital.

Another way, comparatively unimportant, in which previously accumulated capital may be made a source of war revenue is by allowing fixed capital to depreciate during the war. However, so far as such fixed capital is used in necessary production, a policy of this kind would soon prove disastrous. It would before long result in a reduction of current income.

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The conclusion seems to be, therefore, that *the surplus of current income must be the principal source of funds for the financing of the present war.* The fundamental question is whether that surplus shall be obtained for government use by borrowing it or by taxation.

The most basic fact which must be borne in mind in discussing this problem is that, *for the people considered as a whole, domestic borrowing postpones no burden to the future.* This really follows at once from the fact that only goods produced before or during the war or men living during the war can be used in conducting the conflict. We cannot shoot a shell to be made in 1930. The future is not here to bear burdens. Of course borrowing abroad does make it possible to postpone the burden of the home country.

Borrowing at home, so far as a nation as a whole is concerned, is precisely similar to borrowing by an individual from himself. The reason the individual may gain by borrowing is because he borrows from another person. Would John Smith gain anything by writing a note to this effect: "Fifty years from date I and my heirs promise to pay to myself and my heirs $1,000 with interest at 6 per cent"? So far as the nation as a nation is concerned, a government bond issued at home is precisely similar to such a note in its effect.

This idea that the burden of war expenditures can be deferred to future generations is the supreme fallacy of finance. Many a business man, whom we have every reason to consider sincere, insists that he is willing to bear his full and just share of the war burdens, but adds that he can see no fairness in making the present generation bear the entire cost of the war, when the future generations are equally to profit by it. The future generations will, to be sure, have their burden from this war. They will have, in all probability, a somewhat depleted heritage of capital. They will presumably have to pay billions in pensions. But the future generations cannot repay to the present generation its outlay in the conduct of the war.

Conceive, for example, that the present generation should wholly pass away in forty years. If war bonds still remained unpaid, the next generation would have to bear taxes to pay interest and principal. But it would be paying to itself; it would have inherited

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the bonds as well as the taxes. What it paid would not be a burden on the people of that generation as such. It would not be repaying the present generation. The fact that generations gradually merge into one another does not change in the slightest the logic of the matter.

The same argument which applies to the future generations applies as well to the future years of the present generation. Professor Seligman, among others, is not disposed to favor long-term bonds, but urges short-time bonds in preference to taxes for a large part of the war expenditure. He says it would be easier for the people to pay for the war in ten years than in three, assuming that it is over in three years. As a matter of fact, for the people considered as a whole it would not be one whit easier. What the people as a whole receive as interest and principal repayment, that they must also pay. They defer no burden by the short-time bonds.

While domestic bond issues postpone no burdens to the future as such, *they do make possible a readjustment of the war outlay as between individuals and classes in the community.* The really fundamental questions involved in the issue of taxation versus borrowing as a means of war finance are questions of social justice in the distribution of burdens. The war must be paid for now, but there may be a reassessment of expenses among us afterward. For instance, those who have paid more in the first place may be recouped by those who have paid less. We shall all have bought our chips, but we may still play to see who gets, and who loses, them.

If we could assure ourselves that the distribution of taxes after the war would be as just as the distribution of taxes during the war, there would be little choice between taxation and borrowing, were it not for the fact that, by inflating prices, bond issues cause injustice as between individuals and classes, a point which will be discussed later.

Most of what will be said with regard to the relative advantages of bonds and of taxation has particular reference to that part of war expenditures which is paid for, in the first instance, out of the surplus of the current income of the people. To the extent

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that previously accumulated capital can be and is to be taken for financing the war, it should be obtained by borrowing and not by taxation. It may be suggested, however, that if the advantages of taxation over borrowing as a means of securing the surplus of current income should appear material, we ought seriously to question the wisdom of trying to induce men to contribute out of their capital by offering bonds, many of which of course will be bought at the same time by others out of income. At any rate, the policy of issuing bonds for this purpose may well be confined to the early stages of the war, during which, in any case, it is difficult to get the taxing machinery into shape to collect adequate funds.

In one very minor respect, perhaps, the reassessment of war expenses after the war, made possible by the bond plan, may contribute to justice. There are at all times occurring changes in the incomes of individuals. Great fortunes disappear. The newly rich man of the future will of course be a beneficiary of the results of the war. It might be considered fair perhaps that out of his new riches he should contribute large taxes toward the bonds held by those who furnished funds during the war. However, these changes in the distribution of income are not so great as is sometimes supposed. Particularly if the war is financed by short-time bonds, the great bulk of the nation's income will, during the period of bond repayment, be distributed in substantially the same fashion as at present. The really important question regarding the just assessment of war burdens does not arise out of changes in the distribution of income, but out of the inequality in the distribution of income. The important thing is that there should be a fair apportionment of taxation as between the richer and the poorer classes. It is much to be feared that it would be less possible to secure such a fair apportionment if the war expenditures are reassessed after the war under the bond plan than if they are settled, once for all, under the policy of "pay as you go."

In order to get any clear idea as to the justice and the feasibility of different methods of distributing the burden of war expenditure, it is necessary to arrive at some estimate, in the first place, of the proportion of the total national income which will be required for war purposes, and, in the second place, of the distribution of

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the national income among families, classified according to the amount of their incomes.

It is not improbable that the United States will, by next year or at any rate before the war is over, be spending at least one-third of the total annual income of its people for the conduct of the war. In all probability in Germany today half of the nation's income is going into the war; half of the productive power of the country is being devoted to the conflict. It is commonly stated that the United States must expect to spend 15 or 20 billion dollars per annum on the war. This is roughly two-fifths of the national income. No one knows, of course, exactly what that income is. The most thorough investigation of the subject is that of W. I. King. His estimate for 1910, which I have checked with some care, was in round numbers $30,000,000,000. In view of the increase of population, the speeding up of industry, and the inflation of the currency, it is probable that the present figure would be around $40,000,000,000; it might possibly be $45,000,000,000. Needless to say, the real income has not increased in such a ratio, but we are dealing with income expressed in terms of money.

The accompanying table (Table I) attempts a rough classification of this national income. I have undertaken to divide it into ten equal parts, according to the magnitude of individual family incomes, and to show the approximate limits of the family incomes constituting each class. In this table I have followed in a general way the classification made by W. I. King, but, on account of the rise in prices and wages, I have raised considerably the limits of the several income classes.

Whatever the imperfections of this table, it is accurate enough to demonstrate that a very large proportion of the total income of the country is made up of the millions of small incomes. It is probable that incomes exceeding $25,000 do not in the aggregate form more than one-tenth of the national income.

If we assume that as much as one-fourth of the total income of the country will be required for war purposes, two conclusions follow at once from such a classification of incomes. In the first place, it is not possible to finance the war exclusively through the contributions of the richer classes; and, in the second place, it is

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almost equally impossible to finance it by calling for an equal rate of contribution from each class. These conclusions hold whether the money be obtained by taxes or by bonds.

TABLE I

Approximate distribution of national income into tenths according to magnitude of individual family incomes [Col. 1]; approximate percentage of its income which each class should contribute in order that the total contribution should equal one-fourth of national income [Col. 2]; and percentage of total contribution which each class would then contribute [Col. 3].

No.	Incomes Falling within Class (Col. 1)	Percentage of Income Contributable (Col. 2)	Percentage of Total Contribution Furnished by Each Class (Col. 3)
1	$ 0–$ 600	10	4.0
2	600– 750	10½	4.2
3	750– 900	11½	4.6
4	900– 1,050	13	5.2
5	1,050– 1,250	15	6.0
6	1,250– 1,500	18	7.2
7	1,500– 2,000	22	8.8
8	2,000– 5,000	30	12.0
9	5,000– 25,000	45	18.0
10	25,000 and over	75	30.0
Average and total		25	100.0

Even if substantially all the income of persons having incomes of $5,000 or more were turned over to the government, it would not be enough to meet the war expenditures. On the other hand, it cannot be expected that families with incomes of less than $900, whose incomes together make up roughly three-tenths of the national total, should out of their meager means contribute one-fourth to the government. Undoubtedly such families could continue to exist, even with such a deep cut into their incomes, but it would be most unwise from the standpoint of national efficiency, and indeed suicidal from the political standpoint, to adopt any financial policy which would compel them to do so, unless, to be sure, our straits become so desperate that, by common consent, it appears necessary to spend considerably more than one-fourth of the total national income for war purposes.

I have thought it worth while to compute a series of progressively increasing percentages, representing in some fashion what

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proportion of its income each of the classes distinguished in the table might be expected, without undue hardship, to contribute in the first instance, by loans or taxes or both, to the support of the war. No assumption is here made that these percentages represent a just distribution of the final burden of the war. On the basis of a total war expenditure amounting to one-fourth of the

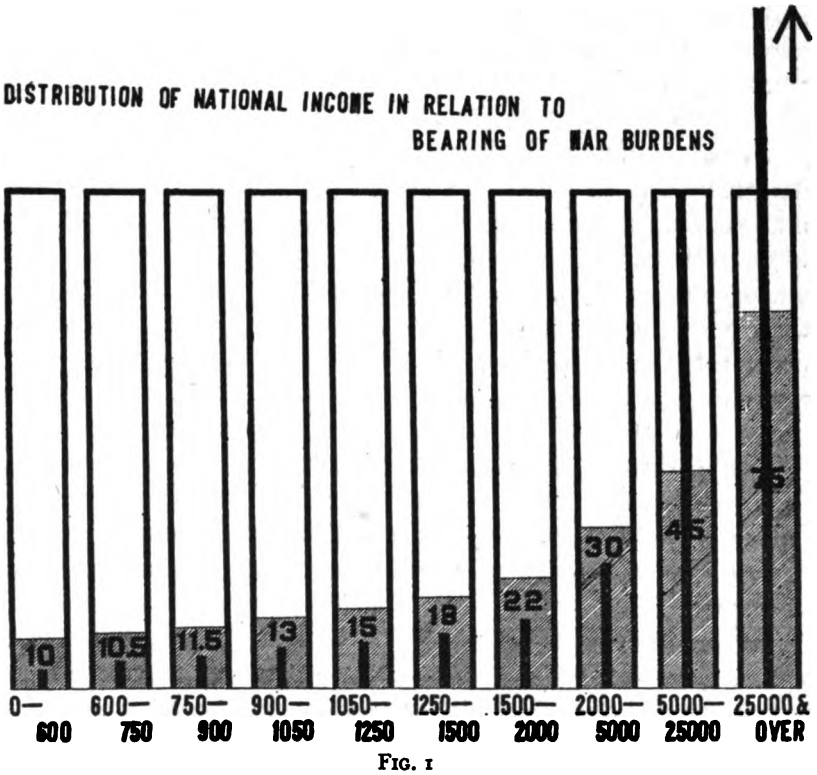

FIG. 1

national income, I have figured, for example, that the class with the smallest incomes might be expected to contribute 10 per cent of their incomes, and the class with the largest incomes, 75 per cent of theirs. The average of the several percentages is 25 per cent. The percentages increase but slowly for the lower-income classes, but much more rapidly for the higher classes. A column is also added showing what proportion of the total war expenditure would, on the basis of these percentages, be contributed by

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each class, ranging from a contribution of 4 per cent by the lowest class to one of 30 per cent by the highest class.

It may, of course, be argued by the advocates of highly progressive taxation for war purposes that the rates of taxation might be made even more sharply progressive than the percentages in this table; that the rates for the lowest classes might be made still lower, and those for the highest classes still higher. Or it may be urged by the friends of the bond-issue plan that the rich can be induced to lend to the government a larger proportion of their income than 75 per cent. One may doubt, however, whether it is feasible to obtain, either by taxation or by borrowing, much higher percentages than here indicated, so long as no more than one-fourth of the total national income is required for war purposes. It should be borne in mind that these percentages are calculated on the basis of the average income of the class, not of the highest income. Doubtless the higher classes should be subdivided with a graduation of the percentages as incomes increase. We cannot expect, at least not for some time to come, that the more well-to-do will completely change their habits of consumption, or that they will entirely forego making investments in non-war enterprises. To attempt to obtain for government use more than half of an income of, say, $12,000 (which is about the average for the income class from $5,000 to $25,000) would scarcely seem practicable, at least for some time to come.

At any rate, let us assume for the sake of clearness in the further discussion that the various income classes do contribute during the war itself, either by paying taxes or by buying bonds, in the proportion indicated.

Now, it is perfectly evident that, if the war should be financed wholly by domestic bonds, purchased out of surplus income by the various classes in the proportions indicated, and if after the war the taxes for the debt service should be laid upon the several classes in precisely the same proportion, the bond issue would not result in any general shifting of burdens. Each class would then be paying the interest and repaying the principal of the bonds it held. Apart from the effect of the bonds in inflating prices they would result in no advantage and no disadvantage to any

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class, as compared with the plan of collecting the same sums in the first instance by taxation. Were it clearly understood that (so far as income classes rather than individuals are concerned) post-war taxes would be levied in practically the same proportion as bonds are held, there would be little ground for desire on the part of the wealthy that the war be financed by bond issues rather than by taxation.

However, it is possible by the bond plan to readjust the burden after the war—possible to put more of it on the poorer classes. For while, for example, it might not be politically feasible to obtain from those in the class with the lowest incomes more than, say, 10 per cent of their incomes during the war, which would represent 4 per cent of the total war expenditure, that class would undoubtedly be able, by dividing the burden over a considerable series of years, to pay interest and principal on more than 4 per cent of the national debt. The members of this class would after the war pay as taxes more than they received on the bonds they held. In this way the rates of taxation for the more well-to-do could be kept down. They would receive more than they paid. In other words, part of what they had advanced to the government would be repaid to them by other social classes.

This brings us, then, to the two fundamental questions in the issue of taxation versus borrowing: In the first place, is the ultimate assessment of the burden of war expense on a highly progressive principle socially just? In the second place, is it feasible to collect by taxation any such proportions of the income of the several classes as it would be necessary to collect if no bonds were issued?

We certainly could not collect the entire cost of the war by taxation unless we levied taxes at highly progressive rates; at rates approximately corresponding to the percentages set forth in Table I. Is this a fair distribution? Or would it be more fair that part of the moneys which the more well-to-do contributed should be later repaid to them by the less wealthy?

Most of us, business men and economists alike, believe in some measure of progression in the taxes for war purposes, whether levied during the war or after its close. The only difference among

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us is usually a matter of degree. If, as is pretty generally conceded, the principal measure of just distribution in taxation is the ability to pay, the degree of sacrifice involved in the payment, the rich man unquestionably may properly be called on to pay a materially larger proportion of his income as a tax than the poor man. To take from a man who has an income of $600 a tax of $60 cuts distinctly into his standard of living; it makes him forego what are virtual, if not absolute, necessities. To take from a man who has an income of $100,000 a tax of $10,000 involves little, if any, reduction in his standard of living; in all probability it means merely a reduction in the investments which he makes out of income—a slowing up in the rate of accumulation of his wealth and of increase in his income. The sacrifice of the poorer man is far greater than that of the richer.

The principle of equality of sacrifice justifies a very considerable measure of progression in tax rates, even for ordinary peace expenditures. For war expenditures the argument in favor of progression is still stronger, and a more rapid rate of progression is justifiable. For in war time the need of the nation is so great that it calls upon multitudes of its citizens for the greatest of all sacrifices, that of their very lives. The welfare of the entire country, both for the present and for the future, is at stake. It is the duty of every citizen to share in war's burdens to his utmost. There is no definable limit to his obligation. The citizen who contributes even his entire income beyond what is necessary to subsistence itself, does less than the citizen who contributes himself to the nation.

If conscription of men is justifiable, conscription of income is a logical corollary. This slogan has been attacked in some quarters on the ground that it assumes that only the poorer men will be conscripted to fight. It is urged, and rightly enough, that, as a matter of fact, the rich are equally subject to conscription, and, indeed, are quite as likely as the poor to cheerfully devote their lives to the nation's service. But has this criticism any real validity? The principle of conscription implies the justice of demanding from each citizen all that he can give, both of personal service and of money contribution, not the one as a substi-

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tute for the other. It is the duty of the poor man, if called upon, to give what he can spare from his income, and his life as well, and it is the duty of the rich man to do the same. We ask of each citizen to sacrifice his all, if need be, for his fellow-men and his posterity.

In discussing the social justice of a system of war financing, we may properly consider, moreover, the ultimate effect upon the distribution of wealth and income among classes of the community. Many, if not most, of us believe that, quite regardless of the methods by which the more well-to-do have obtained their wealth or obtain their present incomes, the inequality in income as among the various classes is greater than is socially desirable. A tremendous gap lies between the penury of the millions and the affluence of the few. We should dislike to see any action of the government in connection with the war which would increase this disparity of income.

Now, it is evident that if the war is financed by bonds with a view afterward to providing for the debt service by taxes less highly progressive than would be necessary if the expenses were met by taxation during the war itself, *the result would be ultimately to make the rich richer*. Part, at least, of the saving which they undertook during the war in order to contribute to the government's needs would ultimately be repaid to them out of taxes levied upon the poorer classes. Their capital would thus become greater than it was before the war. After the taxes for repaying war bonds had ceased, the annual income of the rich bond-buyer would be actually greater than before the war. On the other hand, if during the war itself highly progressive taxes were levied sufficient to meet the war expenditures, they would not serve, in any appreciable degree at least, permanently to lessen the inequality of income. They would not make the rich permanently poorer. This statement assumes that the taxes would be paid out of income, not out of capital—an assumption which requires but insignificant qualification. The sacrifice of all classes would be temporary—for the period of the war only. After the war expenditure ceased each class would be in the same relative position as before. Only during the war would the income of the rich be reduced more than that of the poor.

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In substance, then, war financing by bond issues is likely, even apart from its effect on incomes through the inflation of prices, to result in an increased inequality in the distribution of wealth and income. This is not a necessary result, for the taxes for debt service might be so levied as to prevent it, as virtually to make each class pay interest on, and repay the principal of, its own loans to the government. There would be little likelihood, however, that the taxes after the war would be made sufficiently progressive to bring this about. The great political power of the well-to-do classes would almost certainly enable them, if they sought to do so, to shift part of the burden on the poorer classes, and they would probably seek to do so. The patriotism which during the war itself might induce the rich willingly to pay taxes according to the full measure of their ability is bound to wane considerably when the war is over. There is little enthusiasm about paying for a dead horse.

The tax policy, then, is more likely than the bond policy to mean the ultimate payment of war burdens in the manner which is socially equitable.

Thus far we have passed over the matter of the effect of bond issues on the incomes of different individuals and classes by reason of the inflation of prices. There has been so much discussion already regarding the effects of national borrowing upon prices that I shall not enter into a detailed presentation of the argument. It seems to be the opinion of the large majority of economists and of others capable of judging the question, that, except so far as the bonds are sold to individuals who severally pay for them out of the immediate surplus of their incomes, they are likely to serve to inflate prices. That is to say, so far as bonds are purchased with borrowed money, they bring about an increase in the amount of credit in the community which has an effect similar to an increase in the money supply itself. The transaction would not represent simply the transfer of purchasing power from individuals to the government. It would represent an increase of purchasing power. It is also generally agreed that it would be almost impossible to prevent large resort to borrowing on the part of subscribers to war bonds.

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There is a grave danger, moreover, that continued and heavy resort to borrowing as a means of war finance will ultimately lead to the direct inflation of the currency by paper money. The temptation to enforce the making of loans to the government by paying for the government's purchases with paper money becomes very great as soon as the borrowing has reached such a stage that interest rates are high. Moreover, under our present banking laws it will be possible for the banks to increase the currency through the issue of bank notes, if the demands of expanding credits make it profitable to do so.

One need not undertake to prove that expansion of the circulating medium, either in the form of actual currency or bank credits and the use of checks, inflates prices. We all know it must do so. All that is necessary is to emphasize the social injustice which results from price inflation. Were all prices advanced alike, including the price of all forms of labor and including interest on previous investments, price inflation would not change the relative incomes of different individuals and classes, and would do little harm. Such, however, is far from being the case. Wages always lag far behind commodity prices. Salaries generally lag behind wages. Many incomes fixed by long contracts do not increase at all; the holder of a railroad bond, for example, gets no addition to his income when prices advance. Those whose incomes increase not at all or increase less suffer for the benefit of those whose products advance more rapidly in price. The wage-earner, for example, finds, not merely an absolute, but a relative, increase in the cost of his living. The prices of what he buys rise more than his wages. Grave injustice as between individuals and classes is thus worked by the inflation of prices, and any policy which is certain or even likely to inflate prices should be avoided unless there are still graver evils attendant on every alternative policy.

The enormous advance in prices which has already taken place since the war in Europe began renders it particularly important that we should, if possible, avoid further inflation. While many individuals and some large classes of the population have profited through the high prices of recent years and the general stimulation of business, it is more than probable that the wage-earning classes

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in general are worse off today than they were before the war, and it is certain that great numbers of other persons are worse off than before. Indeed, one of the serious objections to levying any considerable war taxes upon the wage-earning and salaried classes lies precisely in the diminution of real income which so many of them have already suffered.

The question still remains, however, whether it is feasible from the fiscal and political standpoints to collect by taxation during the war period a sufficient amount to cover the war expenditures, whether there are practical difficulties in the tax plan which offset its advantages in principle. To pay as we go would, as already shown, demand both extremely high taxes on the rich and taxes of considerable severity upon the poorer classes. Can we devise means of assessing and collecting taxes which will bring the revenue needed, which will not destroy business, and which will preserve a fair measure of justice as between individuals?

We are, of course, confronted with difficulties of psychology and of mistaken economic ideas. The fallacy so widely prevalent that the future can and should share in the burden of war expenditure might, if the pay-as-we-go policy were adopted, cause bitterness and lead to deliberate attempts at evasion, even on the part of those who are perfectly willing to bear their fair share of the burden. When even a man of intelligence harbors the idea that by buying a bond he is making an investment instead of a contribution, without ever asking himself whether his future taxes for debt service will exceed what he receives in the form of interest and principal, it may seem preferable to take advantage of this notion as a means of securing money for the government more easily. It would appear, however, that the majority of the people already dimly recognize the fallacy; a great many of them recognize it clearly. The poorer classes, from whom, after all, we must expect considerable contributions to the war expense, very generally are coming to feel that the bond plan is likely to be a means of increasing their relative share of the burden. Moreover, we must consider the effect of the two methods of finance, not only upon the attitude of the people toward giving financial support to the war, but also upon their attitude toward enlistment and other personal service. A majority

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of the men who fight will probably soon come to understand the financial problem and to feel that those who stay at home are supporting them more loyally by paying taxes than by buying bonds.

If once this fallacious idea as to the postponement of burdens can be dispelled, it is probable that there would be comparatively little difficulty in securing general support for heavy taxation, even from those charged with the highest rates, and that the great majority of the people would pay such taxes without attempt at evasion. One can hardly overestimate the effect of patriotic sentiment during war time as an aid to the fiscal policy of the government. Much heavier taxes can be successfully collected during war than during peace. It is by no means improbable, for example, that after a year or two of war a given rate of income tax would produce twice the revenue it produced before the war. Of course there would be evasions, and evasions represent, not merely loss of revenue, but injustice as between individuals. Nevertheless, the evasions even of heavy war-time taxes are likely to be less than the aggregate of evasions during a longer period of post-war taxes designed to provide for debt service, when patriotic spirit no longer is so efficacious in checking evasion.

One of the chief arguments ordinarily advanced against extremely heavy taxation is that it would destroy business, that it would, to use an old adage widely quoted in this connection, kill the goose that lays the golden egg. For the most part this criticism rests on fallacious reasoning. It is true that taxes unintelligently devised may have such an effect in considerable measure. The only fund out of which taxes ought to be paid is the fund of net income. So far as they are drawn from net income, they have comparatively little tendency to destroy business. They cut into the profits of business, but they do not eliminate the source of profits. It may readily be that by adopting indirect methods of attempting to reach net income the government may cut off the net income of certain enterprises altogether or may in some cases take more than the net income. It follows merely that the greatest care should be exercised in choosing the method of taxation.

The notion that even taxes paid out of net income tend to destroy business is substantially unsound, although it possesses

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some small elements of truth. The underlying fallacy is closely kin to the fallacy of "business as usual." Those who argue that heavy taxes, even if paid out of net income, will destroy business have usually in mind the fact that they would check consumption, especially of unnecessary commodities, and would thus reduce the demand for certain goods, reduce the profits of those producing them, and lessen their ability to contribute to the support of the war. Such persons overlook the fact that the productive power which is deprived of a market in certain directions will, for the most part, be greedily absorbed in the production of things necessary for the war; that the total income of the community is not necessarily reduced by reducing consumption in certain directions. It is true that some capital, which is engaged in the production of luxuries and which is incapable of adaptation to the production of required commodities, must go out of commission, thus tending to lessen the national income, but this loss is probably more than counterbalanced by the continuous and efficient employment of other capital and of practically all labor—by the general speeding up of industry.

Those who object to heavy taxation on this ground, moreover, fail to realize that very much the same effect must necessarily follow from large borrowing on the part of the government. Money used to buy government bonds can, no more than money used to pay taxes, be devoted to the ordinary channels of consumption. It is a fair question, indeed, whether the financing of the war primarily by bond issues would not disturb business even more than would financing primarily by taxation. Large government borrowing necessarily diverts much capital from its ordinary employment. For one thing, it is bound to result in extensive calling of private loans for the purpose of investment in government bonds. This may go so far as seriously to hamper many enterprises, even enterprises engaged in very necessary lines of production; it may even bring about a financial crisis.

It must be conceded, however, that exceedingly high taxes may in some cases cause hardship and disturb business, and that under certain conditions loans might cause less hardship and disturbance. Not all income of men of a given income class is equally available

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for immediate contribution to the government. The net income of the one may be pledged to the payment of indebtedness, of rent, of subscriptions to securities made before the tax was levied. The income of another may be really needed for new investment in an enterprise necessary for the proper production of the country, perhaps for war production itself. The income of still a third may be almost in its entirety readily available for contribution to the government; indeed, he may have accumulations of past income, which, from his own personal standpoint at any rate, are readily convertible. To tax all three heavily is in some measure to disturb business and to inflict unequal burdens. If, on the other hand, the man with free income or with accumulations of the past can buy bonds, the interest and principal of which will in part be repaid to him subsequently by the others, an advantageous adjustment will have been made. Putting the matter in another way, the bond plan leaves a considerable measure of leeway; it leaves to the individual a desirable amount of choice, of discretion, as to the time and manner of his contribution to the Treasury.

Were it not for the serious danger that bond issues would be made to result, not merely in such reasonable adjustments of burdens in point of time, but in a wholesale transfer of them from the more well-to-do to the poorer classes, the argument above mentioned would go far to justify a considerable resort to the policy of borrowing. As it is, the balance of advantage still seems to remain with the tax policy. It would seem possible for arrangements to be made by most men who are subjected to heavy taxation, by which they may tide themselves over any temporary difficulty due to the tying up of income. And, in particular, the objection that heavy taxation would render difficult the investment of the new capital needed for war enterprises themselves may surely be met by advances of capital by the government, or by permitting certain corporations, under due regulation, to retain free from tax, at least for the time being, the surplus profits which they need for further investment.

It is no part of the purpose of this paper to suggest in detail a system of war taxation. To discuss the many problems involved would take a great amount of time. A few fundamental ideas may, however, be presented.

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In the first place, it is evident that, if the principle of progression, which is so essential both to justice and to the obtaining of the necessary revenue, is to be largely applied, very great reliance must be placed upon the taxation of individual incomes. While the excess-profits tax, in the sense of a tax which seeks to take for the government part of the increased profits due to the war itself, is just and may properly be a large source of revenue, the heavy taxation of corporations merely as such is incompatible with the principle of progression. Taxes upon corporations fall equally upon persons of very widely varying individual incomes. One stockholder may be a multi-millionaire, another a widow in moderate circumstances, and another even a wage-earner or a farmer of very small total income. Since practically everyone fully supports the idea of taxing at least the medium-sized and large incomes directly and progressively, all that is necessary to do with the income tax, in case the policy of financing the war largely by taxation is adopted, is to make up our minds to decidedly higher rates all along the line than have thus far been proposed. The machinery for ascertaining the incomes, at least the moderate and large incomes, is in existence or in process of organization. A heavy and highly progressive personal income tax would of course result in some evasion, which would both reduce the revenue and work individual injustice, but the evasion would be, as already suggested, far less than in times of peace. Not only would the patriotic sentiment help greatly, but the public would be prepared to support severe penalties for evasion, which in times of peace are scarcely enforceable.

It should of course be understood that, whatever our views as to the ultimate weight of taxation which is just and proper, we ought not to attempt to apply that full weight at the beginning of the war. It takes time to work out satisfactory laws and to develop adequate administrative machinery. Even more important, it takes time for the patriotic spirit of sacrifice to reach its maximum, and time for the people to realize the necessity of drastic taxation, and to accustom themselves to it. We may properly tax much more heavily the second year of the war than the first, and still more heavily later on. Much of what is said here as to proper

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methods and rates of taxation, both of taxes on incomes and of other taxes, has reference rather to the later years than to the first year of war.

It is probable that, if the policy were to collect practically the entire expense of the war by direct income taxes, the relative rates on incomes of different magnitudes indicated by the table already presented would represent not far from a fair distribution. In other words, if it were deemed necessary to take a quarter of the total national income for government use, the rates of tax might properly begin with about ten per cent on the smallest incomes, rise slowly to about 20 per cent on incomes of, say, $2,000, and then rise more rapidly until the average income of the highest income group distinguished in Table I would be taxed about 75 per cent.

Of course the progression should be made more gradual and continued to a higher maximum by subdividing the higher incomes into groups with varying rates. The very largest incomes of all might properly, it seems, be taxed up to almost 90 per cent of their amount. It is no more severe a burden to take 90 per cent of an income of $10,000,000 a year, which would leave the recipient still the huge sum of $1,000,000 to spend or to invest, than to take 10 per cent of an income of $500 or $600.

It does not seem wise to adopt a scheme of taxation which takes all of the excess of income above any limit whatever. There is some argument, perhaps, from the standpoint of social justice, in favor of the often advocated proposition that no man during the war should be allowed to retain more than, say, $100,000; that all that he receives above such an amount should go to the state. The difficulty is that fixing an absolute limit of this sort would, at least in the case of many individuals, discourage enterprise. They would feel that it was not worth while to exert themselves to the utmost, and especially not worth while to take risks, merely for the sake of increasing what they could pay to the government. On the other hand, there would still remain a very considerable incentive to enterprise if the income-producer were allowed to retain for himself a fraction, even as small a fraction as 10 per cent, of the additional income he could produce above a given limit.

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It is a well-recognized fact that it is both unjust and inexpedient from a fiscal standpoint to increase the rate of taxation on the total income in passing from a given income class to the next higher. Such a policy might easily result in leaving a person with a larger income a smaller amount, after paying his higher rate of tax, than was left to a person of smaller income after paying the lower tax. It is desirable, of course, that the higher rate should be applied in each case to the excess of income above the limits of the class. Table II, which has been worked out on this principle of applying increasing rates to the successive increments, would result substantially in taking from the average income of each of the ten income classes distinguished in Table I the percentage indicated in that table. For example, if the rate on incomes up to $600 were fixed at 10 per cent, a rate of 15 per cent on the excess over $600 would result in a total tax, on an income of $675, equal to 10.6 per cent. This table suggests that the excess of any income over $100,000 be taxed at 90 per cent. In the case of an income of $500,000, for example, this would result in a total tax of $425,000 in round numbers, or 85 per cent of the income. It is not meant to imply, by this discussion of the proper relative rates on different incomes in case the income tax were the sole reliance, that, as a matter of fact, it should be the sole reliance. To the extent that other taxes are used, income-tax rates should be correspondingly adjusted.

The excess-profits tax, as above defined—the war-profits tax—may properly be made to produce a very considerable revenue. There is pretty general agreement as to the justice of the principle that no one should profit by the nation's calamity, that, except so far as it may be necessary to leave some stimulus to enterprise, the profits due to the war itself may justly be taken by the public. There are, however, some difficulties involved.

In the first place, it is impossible to ascertain, and still more impossible to collect, any large fraction of the excess profits of the many concerns and individuals whose special war profits are small in absolute amount. In my opinion, the farmers taken as a whole have probably profited more and will profit more by the war than any other one class; perhaps more than all other classes put together.

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There is no satisfactory way, however, to determine or to tax their excess war profits.

TABLE II

Rates of tax on the excess of incomes above specified limits which would result in a distribution of a total tax equal to 25 per cent of the national income approximately in accordance with the percentages of Table I.

Income Class—Based on Division of Total National Income into 10 Equal Parts	Assumed Average Income of the Class	Rate on Excess of Income above Minimum Income of Class	Total Tax on Average Income of Class	
			Amount (1)	Percentage of Income
$0–$600	$ 500	10	$ 60.00	10.0
600–750	675	15	71.25	10.6
750–900	825	20	97.50	11.8
900–1,050	975	25	131.25	13.5
1,050–1,250	1,150	30	180.00	15.7
1,250–1,500	1,350	35	245.00	18.1
1,500–2,000	1,700	40	377.50	22.2
2,000–5,000	3,150	45	1,015.00	32.2
5,000–25,000	12,000	50	5,347.50	44.6
25,000 and over				
a) 25,000–100,000	45,000	70	25,847.50	57.4
b) 100,000 and over	400,000	90	424,347.50	84.9
Simple average of (*a*) and (*b*)				71.2

The method of arriving at this total may be illustrated thus, for an income of $975, the assumed average of the fourth class:

On first $600, 10 per cent equals	$60.00
On next $150, 15 per cent equals	22.50
On next $150, 20 per cent equals	30.00
On excess over $900 ($75) 25 per cent equals	18.75
Total	$131.25

In the second place, it should be borne in mind that, if by excess war profits we mean the additional profits following our own entrance into the war, these will not necessarily be very large. The great demand resulting from the war in Europe had already caused large increases in the profits of many enterprises. The profits of some of these enterprises will doubtless be still further increased by our entrance upon the war, and those of some other enterprises may also be swelled, but the addition may not in the aggregate equal the increase that had previously taken place. On the other hand, there is some measure of injustice involved in levying heavy taxes on the excess of present profits over those

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preceding 1914 or 1915. Many thousands of investors have bought stocks of corporations at high prices based on the large earnings of recent years. Some of these are persons of very moderate means. Their incomes and the market prices of their securities would be greatly reduced if a large fraction of the excess of the profits of these corporations, over what they were making before the European war, should be taken by taxation. Of course, so far as the stockholders of these corporations remain the same as they were before the war, there is little, if any, injustice.

It seems on the whole justifiable and politically expedient to levy two kinds of taxes upon the excess profits—one, a tax on the excess by comparison with the three or five years preceding 1915; the other, a tax at a higher rate on the excess since our own entry into the war.

Very little is to be said in favor of an excess-profits tax which takes the form of a tax on the excess profits above a certain percentage on the investment. Such excess of profits may bear no relation to war profits as such, and it may bear very unequally among different individuals who have purchased stocks in the corporation at different times and at widely varying prices. Moreover, the tax would be much more difficult to assess properly because of the uncertainty as to the true investment to be used as a basis of computation.

Income taxes and excess-profits taxes should be the principal forms of taxation designed to reach the families of middle-sized and large incomes. These should perhaps be supplemented by taxes on luxuries, designed to suppress their use and to compel saving, but there would be much less need of these if the other taxes were high. The inheritance tax should be continued, but not greatly increased.

Greater difficulty confronts us when we reach the problem of securing adequate taxes from those of comparatively small income. It is generally considered impracticable to collect direct income taxes from wage-earners and from farmers. It is argued that it is both difficult to ascertain their incomes correctly and expensive to assess and collect the tax. On the other hand, indirect taxes present many objectionable features.

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It seems to me not only practicable but desirable that, after the war has continued a year or so, we should undertake to apply income or quasi-income taxes to families with much lower incomes than those made taxable by the recent tax law. The chief argument for doing so lies in the enormous amount of injustice which is bound to result from indirect taxes sufficiently heavy to obtain the revenue that the receivers of such lower incomes ought to contribute if the war is to be financed chiefly by taxation.

Moderate indirect taxes we can put up with despite the inequalities which result, but extremely heavy indirect taxes are most objectionable. In the first place, while it is the proper object in levying an indirect tax that the precise amount shall be shifted to the consumer, it actually happens sometimes that only a part of it can be so shifted, the remainder falling on the original taxpayer or on some middleman, and sometimes, on the other hand, that the consumer is forced to pay to the producer or the middleman more than the amount of the tax. No one can know just what the incidence of heavy taxes on commodities, for example, will prove to be. Moreover, when after the war the government seeks to reduce or to abolish the indirect taxes, all sorts of difficulties and inequalities are likely to appear. In the second place, no one can correctly foresee to what extent heavy indirect taxes will suppress consumption and defeat their own end by failing to produce the anticipated revenue. And finally, even if all the tax and no more is shifted to the consumer, the resulting burden on different individuals and families is likely to bear very little relation to their incomes or to their taxpaying ability.

It would probably be wise in the later years of the war to tax all family incomes exceeding $1,000 by income taxes in the ordinary sense of the word; that is, by ascertaining as nearly as possible the actual family income and assessing a certain percentage upon it. This would involve little more difficulty, aside from some increase in the ratio of administration expense to revenue, than the application of income taxes to incomes of $2,000. It seems well worth while, moreover, to consider seriously the feasibility of something akin to the income tax—what may be called a class tax or a quasi-income tax—as a means of obtaining revenue from wage-earners and

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farmers with still smaller incomes. Would it not be practicable with a fair measure of accuracy to assign each individual wage-earner, or perhaps better each wage-earning family, to a given income class and to collect a fixed amount of tax from all in that class? It would seem possible, for example, to ascertain fairly well whether a workingman's income for the preceding year fell between $500 and $700, and to tax all incomes within these limits a flat sum, such as $25, making perhaps some deductions for dependents.

As Professor Seligman has stated in his recent brochure, the incomes of farmers are peculiarly difficult to ascertain, and it is even more difficult to tax farmers adequately by indirect methods because they buy much less in proportion to their true incomes than do most other classes of equal wealth. One should not, however, exaggerate the bearing of this difficulty on our general tax problem by overestimating the magnitude of farm income. According to King's calculations, agricultural incomes represent only 22 per cent of the national total; the figure at the outside can hardly exceed 25 per cent.

It would seem possible to apply a rough form of income taxation even to farmers. They might, like wage-earners, be assigned to income classes. In doing so, we might place reliance partly upon their own statements as to production and expenditure and partly upon a valuation of their land and perhaps of their other farming capital. For example, one could by careful statistical inquiry ascertain with a fair degree of accuracy the average or modal income of a farmer in a given state whose farm was assessed at $10,000, and such information could be used as a check upon the actual reports of income.

However, it would probably be desirable, if such a system of quasi-income taxes were adopted, to make them relatively light, and to supplement them by indirect taxes. While it is doubtful whether even grave imperfections in the assessment of such direct taxes would result in as great injustice among individuals as would follow equally heavy indirect taxes, nevertheless a moderate resort to indirect taxes has certain advantages. The fact that the consumer who pays the tax—to the extent that he actually does pay it—is often not aware, or only dimly aware, that he is being taxed

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at all, has a certain value to the fiscal administrator. The policy of levying taxes in such a way as to "procure the most feathers with the least squawking" is bad ethically, but perhaps we must admit it to be in some measure expedient fiscally.

Of course we could, if necessary, put up with indirect taxation as the principal means of reaching all incomes below those now fixed as the minimum for income taxation under the pending bills. It is not entirely clear, however, that one should favor the plan of financing the war primarily by taxation, if this meant that we should have to rely wholly on indirect taxes as a means of obtaining that large part of the national revenue which people who receive incomes of less than $2,000 ought to contribute. If we are correct in our calculations as to the distribution of income, such incomes represent over two-thirds of the national total; and if our assumption as to the proportion of income which each class might properly be expected to pay for war expenditure is reasonable, it appears that they ought to pay approximately two-fifths of the total taxes. If taxes of $10,000,000,000 had to be levied in a year, this would mean $4,000,000,000. The attempt to collect $4,000,000,000 from these classes by indirect taxation, which would mean a still larger total of indirect taxes for the population as a whole, would involve inequalities and injustice almost, if not quite, as great as those that could possibly result from relying largely on bond issues as a means of finance. If we could confine the indirect taxes to moderate limits the balance of advantage would appear to rest with the tax plan of financing.

It would be by no means out of the question to collect one or even two billions by indirect taxes. The proper method would be to tax heavily a comparatively few necessary articles of consumption. It would be especially the duty of the framers of the tax laws to select articles for taxation which are largely consumed by the farming class. High taxes on such products as flour, sugar, salt, kerosene oil, gasoline, coffee, and tea would be fairly effective for this purpose and might be made to yield a very large total. We should not balk at rates much higher than those heretofore proposed. High rates on a few well-chosen articles would be easier to collect, and would work less injustice among individuals and

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classes, than lower rates on a long list of articles and transactions applied with little knowledge as to their actual incidence.

I shall not attempt to draw a perfectly definite conclusion from this discussion. We have before us a problem of relativity, of balancing advantages and disadvantages. On the whole the balance seems to favor an ultimate resort to taxation for a very large part of the war revenues, the share properly increasing as the war progresses. That we should, even in the later years of the war, wholly dispense with borrowing is perhaps not warranted. But to rely upon borrowing for half or more of the war expenditures would seem both unjust and inexpedient.

Finally, it may be stated that the argument for taxation as a means of war finance can hardly be applied as against loans floated in the United States to obtain money, not for expenditure by this country, but for advances to the Allies. In a sense, of course, the Allies are fighting our battles, and it might be good statesmanship for us to give them money outright, in which case it might be collected by taxation; but to the extent that we choose to make our aid to them in the form of loans, it seems proper that those who actually pay the money which goes to these loans should receive the repayment from the foreign countries. In other words, what the United States does in issuing bonds to obtain funds to furnish the Allies is virtually merely to indorse the bonds of the Allies sold to citizens of the United States.

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INDUSTRIAL CONSCRIPTION[1]

I

The raising of vast sums of revenue by taxation and bond issues is too often regarded as constituting in itself an adequate preparation for war. "Our answer to Germany is an immediate bond issue of $2,000,000,000 oversubscribed by nearly 50 per cent." "The war should be paid for by money raised by taxes and bonds in 'proper' proportion." Statements such as these are all too prone to divert our attention from the ultimate requirements of the situation, which are industrial rather than financial. "Financial mobilization" is important only as a means to an end—and the end is *industrial* mobilization. It is my purpose in this paper to discuss the process or machinery by which a nation may reorganize its material resources for the conduct of modern war; that is, how our industries may be transformed and made to serve in the most efficient manner the necessities of war rather than the interests of peace. The problem before us, as I have worked it through, involves a discussion of two substantially different methods of industrial reorganization—the one by means of what I may call the financial machinery and the other by the process of commandeering, or industrial, conscription. Since it is the financial method that we have thus far been mainly following in the United States—since, indeed, in the common view this is the one and only means of preparing for war—it is important that we give this method our first attention.

Before we can make a thoroughgoing analysis of the problem before us we must first face the actual requirements of the situation so far as the United States is concerned. In making this analysis we must of course start with the assumption that we are in dead earnest in the war, that we are going to do all that is in our power to bring the conflict to an early and successful termination—

[1] Presented before the conference of the Western Economic Society and the City Club of Chicago, June 21, 1917. It is here revised in the light of subsequent developments.

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to the end that the ultimate costs of the war both in terms of property and of human life may be reduced to a minimum. What, then, is required of us as a nation?

Four things, in the main, are required of the United States in the next year:

1. Ships—as many as can be built.
2. Munitions and materials of war—as much as can be supplied.
3. Food—as much as can be produced.
4. Soldiers—as many as can be trained.

Numerous subclassifications might be made here, but this simple statement of needs will most effectively serve our present purpose. It will be observed that money is not included in the list of things required. And in fact money will not win the war for us. It is merely a means to an end. A thousand new gold mines discovered tomorrow would have but little effect on the outcome of the war. The rôle that money does play in the process of mobilization for war will be discussed directly. But for the present attention must be centered upon goods and men—not upon money.

The problem that is before us in supplying the unlimited quantities of ships, munitions and materials, food and soldiers, that are required may be made clear by a simple diagrammatic statement:

50,000,000 workers[1] ordinarily produce
- 1. Indispensable goods:
  - *a*) Prime necessities for physical and mental efficiency
  - *b*) Replacement of capital goods used in producing such necessities
  - *c*) New capital goods used in producing necessities
- 2. Dispensable goods:
  - *a*) Luxuries and many conventional necessities
  - *b*) Replacement of capital goods used in producing these dispensable commodities
  - *c*) New capital goods for producing luxuries

If we place two million men in the army the number of industrial workers this year will be reduced to 48,000,000. This loss of

[1] I assume 50,000,000 workers; there may be more or less, but the exact number is quite immaterial. Call it x workers if you prefer.

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numbers may, however, substantially be made good by impressing into the industrial ranks those who are normally not employed. Let us therefore assume that we shall have the same working force this year as last. What now are the alternatives before us as a people?

1. Produce none or few of the indispensable war supplies that the situation requires.

2. Speed up the workers and increase efficiency to a point where we can produce, not only the customary amounts of both classes of goods, the dispensables and the indispensables, but in addition the unlimited quantities of ships, munitions, materials, and food required for the war.

3. Produce less of the things normally produced—the dispensables—and transfer our national energy into the production of the indispensable sinews of war.

I take it that it will be at once conceded that the first alternative is out of the question; it stands as an admission of failure.

The second alternative is regarded by many as adequate, or substantially adequate, to the task before us. We are said to be a big, rich, powerful country that can do anything once we have buckled to the task with characteristic American energy and ingenuity. "We will get there somehow." Now while we can doubtless speed up somewhat, we cannot by that means produce more than a fraction of the munitions, ships, and food required. For it must be observed that the speeding up of workers in *present* lines of production will merely give us additional quantities of the things normally produced, luxuries and other dispensables, along with the things that are indispensable. In so far as we are at present engaged in producing food, ships, and war materials, speeding up will help. But it will scarcely begin to solve the problem. At best it will give us a little more of the indispensables required for war.

There is also much current discussion of the wonderful gains that may be made through increasing efficiency. It is argued that we should make our patriotic impulses the occasion for the universal introduction of scientific management. It of course goes without

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saying that we should do all that we possibly can to further the improvement of industrial methods; and doubtless much may be accomplished. But it must be remembered: first, that increased efficiency will be of importance only in so far as it results in the production of the indispensable commodities; secondly, that a time of speeding up and of reorganization and dislocation in industry is not a favorable time for experimentation with industrial methods; thirdly, that the number of trained men available for the introduction of scientific management is very limited, and that, in any event, business managers, under the spur of private gain, have been endeavoring to improve their methods as fast as possible. Important elimination of waste may be accomplished in certain lines by the co-operative action of normally competitive concerns, as in railroading; but, in the large, we cannot expect too much from the rapid improvement of business processes in the short period of a few months. In any event it is certain that speeding up and increasing efficiency will not enable us to render our maximum service.

At this point it should be emphasized that the position of the United States is unique, so far as the allied nations are concerned. England, for instance, at the outbreak of the conflict could import vast quantities of munitions and supplies from other countries.[1] England, therefore, had a fourth alternative, one denied to us because the struggle is now world-wide. All the materials of war that we furnish must come from the current energy of our own people. We must ourselves produce these ships, munitions, food supplies, and stocks in the coming months. There is no one else to do it for us. In this connection I should like to emphasize with all the power at my command the argument that we cannot by bond issues shift the burdens of this war to future generations. The mere fact that all of us—as represented by the government—borrow from some of us—as represented by bond purchasers—does not change the other essential

[1] Imports have been paid for by England in three ways: first, by exporting gold ($1,400,000,000); second, by reselling securities ($2,000,000,000); third, with credit ($2,000,000,000). These figures are for the first two and a half years of the war.

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fact that we, the people within this country, must actually produce practically all the war materials we are to have for use in the war.

It would seem to follow from the foregoing analysis that the third is the only alternative open to us; and this inevitably means that labor and capital—human energy, if you please—must be shifted from the places that do not count to the places that do count in the task we are undertaking. It means that capital and labor now being employed in building machinery, factories, etc., that are not required for war purposes must be transferred to the construction of factories and workshops that can be used in manufacturing munitions and materials of war; it means that factories already built that are now being used for the manufacture of dispensable commodities, luxuries, etc., must be (where possible) made over into factories that can manufacture *indispensables;* it means that where these factories cannot be remodeled for war purposes they must be closed, and their laborers, at least, released for service that counts.

If perchance there are those who are still unconvinced that substantial readjustments of industry are necessary, who feel that some slight and gradual reorganization will suffice, they should give attention to the specific program that the government has undertaken.

The Secretary of the Treasury tells us that the United States government and our Allies will spend from 16 to 20 billions of dollars in our markets during the first year of the war—20 billions of dollars—a sum roughly equivalent to 20 dollars a minute from the birth of Christ to the present time. Can we produce this coming year anything like $20,000,000,000 worth of ships, munitions, materials, and food if we devote our national energy along customary lines, if we produce dispensable commodities in the usual amounts or even substantially the usual amounts? To ask the question would seem to answer it. But let us nevertheless be specific. How much is $20,000,000,000? What proportion of our national energy will be required for the production of $20,000,000,000 worth of war materials?

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There is a common fallacy abroad in the land to the effect that our wealth is increasing annually with fabulous rapidity—at the rate of approximately $50,000,000,000; and that in consequence the raising of a meager 16 or 20 billions for the purposes of war is a mere bagatelle for America. But a very substantial part of this dollars-and-cents increase is illusory; for it consists merely in rising prices and finds no representation in additional tangible commodities. We can protest and fight against rising prices, but when it comes to war we will find it difficult to fight with them. Something more tangible, I fear, will be required.

The most reliable estimates of our total national income show that we produce annually from thirty-six to forty billion dollars' worth of wealth. This does not mean that the capitalized value of our national wealth increases by forty billions a year, for a large proportion of our annual products is consumed during the year. It means merely that the earnings of labor and capital expressed in terms of money equal this sum. Assuming this estimate to be roughly correct, from 40 to 50 per cent of our total national energy will be required to produce the supplies demanded by this year's program. This will inevitably mean very extensive readjustments of industry, and readjustments in the radical sense of giving up lines of activity that are unimportant for war purposes and transferring labor and capital to the industries which are indispensable in time of war. And note, if you please, that there is no reason why we should be content with a 50 per cent readjustment, provided we can do better. Our program calls for *indefinitely* great quantities of munitions, supplies, and ships. The faster we reorganize our industrial life and the more extensive the material aid we render, the smaller will be the ultimate cost of the war, and the sooner will the nightmare end. The government has fixed, at a guess, 16 to 20 billions as the amount of supplies of all kinds that we can hope to furnish this year. But if we can do better we should by all means do so. *All* the shifting of energy that can possibly be effected should be the goal of our endeavor.[1]

[1] The spring estimates of the Treasury Department were for $9,000,000,000. It is significant that within four months the total estimates of the minimum requirements should have been doubled.

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II

In the discussion thus far we have merely raised the problem of industrial mobilization for war. Now as to the mechanism by which this shifting of social energy may be accomplished. As already indicated we are to discuss two different methods of accomplishing the desired result—the financial method and the method of industrial conscription. The financial method looks to monetary inducements in the form of high wages, high prices, and large profits to effect the necessary readjustments. Close analysis is necessary here, for the precise rôle that money plays in industrial society is confusing at all times to the economic novice, and it is perhaps especially so in connection with war. Our government is to raise the first year of the war, say, $20,000,000,000. It is to spend this vast sum in inducing people to furnish the materials that are required for military operations. These funds are to be passed through the Treasury Department in successive instalments, giving purchasing power while there, but passing, in the act of purchasing, back again into the channels of industry.[1] Money, then, is the means by which the government is enabled to buy the things it needs.

While the process thus far is perhaps generally enough understood, it is usually not so clear that if the commodities required by the government are to be found ready on the market when they are desired, the government must use the money placed in its hands in such a way as to induce capital and labor to be shifted into the production of the supplies and materials demanded.

Let us take some concrete examples. X, a manufacturer of automobiles, is offered a contract by the government to produce motor trucks for army service. If the price offered is attractive, and if the factory can be easily adapted to the manufacture of motor trucks, the manager will usually readily accept the government

[1] There is much apparent mystery as to how the government can raise $20,000,000,000 when there are only about $5,000,000,000 in the country. One way obviously is by having, say, $400,000,000 pass through the Treasury Department 50 times, or once a week for 50 weeks. In fact, however, actual gold or actual money is not used; credit instruments in the form of checks and drafts will be the means of making payments; and, moreover, the Treasury uses the banks as custodians of its funds. Therefore it can hardly be said that any money really passes out of circulation at all.

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contract. Here we have a diversion of energy without great difficulty and without having to pay enormously high prices to accomplish it. But let us take a different case. Y is engaged in the manufacture of candy, or perfumery, or beer, or carpets. The government seeks to induce Y concerns to manufacture war supplies. To do so would require extensive rehabilitation of plant if not indeed new factories altogether. Will Y change the character of his business? Purchasers of candy, perfumery, beer, and carpets engage in direct competition with the government and seek to induce Y to continue his present business, by demanding the usual output of such commodities. The government must here greatly outbid private spenders if it is to secure the production of war supplies.

In this connection it must be borne in mind that the government is not a very effective competitor for either labor or capital—it must pay much higher returns than normal industry if it is to attract the requisite production. Why? Because the laborer does not usually feel the call of patriotism or the lure of adventure except when he contemplates entering the active military establishment. The pecuniary motive *alone* must generally be looked to as the means of inducing him to enter the industrial army of the government. He will not often voluntarily leave his position and apply for one in munitions factories at the same wages, because of the costs incident to transferring to a new (and often distant) employment, and because of the ephemeral nature of the demand for war materials. Very high wages are therefore required if he is to be tempted.[1]

Similarly, the government must pay very high prices for the materials supplied if the capitalist is to be tempted into new and uncertain fields. Can he get efficient laborers for this work? How high wages will he have to pay? How long will the war last? These are but a few of the questions the industrial manager has to ask and answer as best he may. Generally speaking, he will assume the speculative risks involved if the financial inducements

[1] Unskilled carpenters, for instance, are now paid around $80 a week, counting overtime, in building cantonments.

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are high enough, but not otherwise.[1] And not the least of his present concern is the prospect of excess-profits taxes and government control of prices. Will the point at which the tax begins make allowance for his increased risks, or will it be at a flat rate making no discrimination between standardized peace business and uncertain war manufacture? If the latter, he will usually not be willing to make the change. This is one of the points that our friends who urge taxation "to the bone," especially on war business, quite generally overlook. Excess-profits taxes that do not leave open an inducement to transfer from peace to war business will be suicidal, so long as we rely upon profit margins as the method of industrial shifting. It is very significant to note, in this connection, that the present tax bills take no cognizance of this vital consideration. The development of a scientific system of taxation in time of war must take as its point of departure the industrial requirements of the situation; and ordinary peace-time principles of finance may have to assume a position of secondary importance. Thoroughgoing reorganization of industry is even more imperative than distributing the burdens of taxation among the various classes of society according to their relative abilities to pay at the moment. For the ability of any or all to pay ultimately may be dependent upon immediate industrial mobilization. Taxation may be made an effective instrument for promoting rapid industrial reorganization or it may be made an agency that works at cross-purposes with the paramount requirements of the situation. In this connection it should be observed that the argument for conscription of income does not start with this point of view. It runs rather in terms of equality of sacrifice. The real corollary of conscription of men for military purposes is not conscription of income but conscription of men and of capital for the industrial army.

Similarly, if the price control that is developed is indiscriminate, if, owing either to popular agitation or to governmental unwisdom, in lines of activity into which we are endeavoring to attract

[1] A few conspicuous cases may be recalled where industrial managers have volunteered their services to the government. But these are practically always offers from those whose business is of a war type; and this does not therefore result in a diversion of energy from the lines of activity that could be dispensed with.

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additional labor and capital prices are fixed so low as to offer no adequate insurance for the risks and uncertainties of war business, few will be found who will care to assume the hazards. There is a most serious problem here. The very high prices for war materials that are absolutely sure to prevail in the near future will inevitably develop a powerful agitation for rigid price control, "to prevent wealthy malefactors from obtaining exorbitant profits from fat war contracts." Excessive prices should obviously not be permitted, but what is *excessive*, under the circumstances? The government is in fact relying upon the price and profit system to attract industry into governmental service; but since the government does not clearly understand this system, since indeed it is in the main blissfully unaware that it is employing any such device for diverting industry from private to public service, there is grave danger of the government's sawing off the limb it is sitting on. Here and there we now find evidence that the government recognizes that price control must not be allowed to hamper enterprise, but in the main the thought in this connection assumes that it is only with establishments already engaged in producing war materials that we need be concerned, or at best with plants which would require but slight rehabilitation in order to be devoted to war production. The plea for patriotic production of materials is seldom directed specifically to establishments now engaged in the production of luxuries and nonessentials; they have not been generally urged to convert themselves into munitions factories. Nor has the price-control discussion to date specifically had this problem of industrial shifting in mind.[1]

III

The foregoing analysis indicates clearly enough that the process of industrial mobilization through the agency of the pecuniary system must at best be extremely uncertain. There remains to be considered the working of other forces which greatly increase the difficulties inherent in the situation. In a preceding paragraph attention was called to the competition between the government

[1] For an article by the present writer elaborating this argument on price control see *The City Club Bulletin* (Chicago), September 10, 1917, pp. 217–24.

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as a spender for war supplies and private persons as spenders for ordinary consumers' goods. In connection with this competition we meet with a popular fallacy—or rather a combination of self-interest and fallacy—which is further inimical to the rapid mobilization of our industries. I refer to the "business-as-usual" movement.

At the outbreak of the war our first reaction was quite generally in favor of substantial economizing. Immediately following the open letter of President Wilson early in April urging a nation-wide campaign of economy, we entered upon a few weeks of decided retrenchment. How real this curtailment of our customary expenditure was may be guessed from the protest it soon evoked. Manufacturers of many classes of luxuries and even of conventional necessities and retailers of general merchandise shortly began to advertise how ruinous a campaign of rigid economy would be for the country (as well as for themselves). Prominent bankers and business men very generally gave indorsement to business as usual rather than strict economizing. The press editorials generally urged that we should not "rock the boat"; that hysterical economizing is senseless; that we must allow business to proceed much as usual or we should kill the goose that lays the golden eggs so necessary to the successful prosecution of the war. The possibility of widespread closing of factories, throwing thousands of laborers out of employment and resulting in general depression, caused genuine concern in the world of business. The government also back-pedaled for a time. Certain members of the Council of National Defense went on record against undue economy, and the Secretary of the Treasury, while urging the elimination of waste and of reckless extravagance, apparently stood for business very much as in normal times. The general position of the American people during the early summer may, I believe, be stated substantially in this fashion: "Eliminate extravagant waste, perhaps cut down a little on food where there seems to be a shortage, but otherwise spend virtually as usual. Above all, don't economize to a point which will cause industrial or business disturbance."

The situation in which we found ourselves at the time recalls the experience of England during the early months of the war. After the first terrific shock of the conflict had spent its force, as soon as the nation got its second breath, a tremendous campaign for business

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as usual was inaugurated. The leaders of opinion in England, politicians and the press as well as business men, gave it virtually unanimous indorsement. "Normal living" was heralded as a cardinal virtue, as one of the supreme requirements of the hour. The opinions of the time were, moreover, translated into action and the year 1915 was a golden age for the English lower classes. The records show that the high wages paid in both military and civil life engendered a period of extravagant expenditures. More talking machines, expensive footwear, cosmetics, and passementerie were purchased than ever before, and the general scale of living of the lower classes was substantially raised. Our Council of National Defense quotes with apparent approval that Selfridge's sales in London in 1915 were $375,000 in excess of the year previous—this in spite of the great reduction in purchases by American tourists. This great increase in the demand for luxuries and other dispensables obviously served to increase the profits of ordinary industry and to render it still more difficult to attract the requisite labor and capital for military purposes. Rather than aiding or compelling the necessary readjustment of industry the people of England were unconsciously seriously retarding it.

I use the word *compel* advisedly, for the rank and file of consumers are in a position of strategic importance. By refusing to buy the things that do not count we can force industry into other channels. The government, through the price and wage system, seeks to attract; we have it in our hands to aid the government by the process of repulsion, by refusing to buy dispensable commodities. But we also have it in our hands to work at cross-purposes with the government, by purchasing as usual and thereby preventing or seriously retarding the mobilization of industry.

If England had not possessed a fourth alternative, that of importing vast quantities of supplies from abroad, the war would long since have terminated in a peace *with* victory for the Central Allies. But even with this outside aid England found it necessary, thirteen months after the war started, to abandon in large measure the financial method of industrial mobilization. But more of this in a later section.[1]

[1] Canada is not even yet industrially mobilized for war, and is apparently still taking pride in her ability to consume as usual.

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Our own business-as-usual movement has likewise been unconscious aiding and abetting of the public enemy. Unwittingly we have been doing all in our power to delay the process of industrial rehabilitation. And unless we should almost immediately face about and practice the most rigid economy during the coming months the method of industrial mobilization upon which we are still in the main relying is foredoomed to failure.[1]

We might indeed succeed in raising the $20,000,000,000 of revenue that is desired; but as already seen that is only the beginning of industrial mobilization. Even with coffers filled to overflowing the allied governments will have to wait indefinitely for equipment, munitions, ships, and food if the requisite social energy is not devoted to their production. It is an old saying that we cannot buy something with nothing; it is just as true that we cannot buy nothing with something—we cannot buy that which does not exist even if we have the purchasing power. We always come back to the fundamental truth that we cannot devote our national energy to things that do not count for war purposes and devote the same energy to the production of the things that *are* necessary. This is a war of attrition, and our energy must be utilized in the best possible manner if we are to be crowned the victors in the struggle.

I have been drawing here rather a somber picture; one might perhaps be led to conclude that I have been arguing that so long as we rely upon the financial method of readjustment we shall never get readjusted. Such a conclusion, however, is not warranted,

[1] I would not wish to be understood as standing for economizing to a degree that would mean physical deterioration on the part of our people. Neither would I argue for the abolition of all forms of recreation, entertainment, culture, etc. The spiritual morale of a people is of the utmost importance; and the strain of war must be alleviated by powerful antidotes of pleasure and relaxation. But this can be done—it has been done on the Continent—without consumption as usual. To deny that tremendous sacrifices of material comforts, and even customary cultural or aesthetic enjoyments, may be made for a short interval without impairing physical or spiritual energy is to forget the past history of the human race and to close the eyes to the disciplined efficiency of Europe today. Moreover, a very important element that is usually overlooked by those who argue that we must have our normal recreations in war time is that war news and war activities are for a considerable period in themselves forms of excitement, if not of recreation, which compensate for the absence of many customary modes of diversion.

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for eventually the method will succeed. Already, despite the efforts of business men and the press, there has been some economizing, and this autumn and winter will doubtless see a genuine impetus to the economy movement. Popular subscription to bond issues and heavy taxes on the rank and file of the people play a negative as well as a positive rôle in so far as they force retrenchment in individual consumption. Indeed, one of the strongest reasons, I believe *the* strongest reason, for having the public rather than the banks subscribe for bonds is that in this way a greater amount of economizing is secured and hence the readjustment of industry is hastened.

But these agencies are not such potent means of compelling economy as one might easily assume. For with succeeding bond issues the banks will doubtless advance even larger proportions of the total than was the case with the first issues—either directly, or indirectly through the process of loaning upon the previous issues as collateral. The efficacy of taxation as a means of enforcing economy obviously depends upon the extent to which this form of raising revenue is employed and upon the incidence of the particular forms of taxes that are levied. If we may judge from present indications no great aid may soon be expected from this source.

The most effective agency for compelling economy is, ultimately, rising prices of commodities. I say "ultimately" because the complete process of industrial reorganization appears to involve several more or less distinct stages: first, retrenchment, with the immediate shock of war; second, business about as usual; third, extravagant expenditures, because large purchasing power in the hands of the government means increased employment and substantially increased wages for the laboring classes; fourth, inflated prices and enforced retrenchment in the purchase of luxuries, and eventually even of many necessities. England has passed through all of these stages. In a somewhat less degree these various stages found concurrent reflection in the United States; but we are nevertheless apparently to have them repeated, with modifications and with less intensity, since our own entrance into the war. We have passed through the first and the second; the third we appear to be escaping, and the fourth, already under way, may normally be

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expected to reach its height in a year or so. Eventually, perhaps in two years, we may therefore look to see industrial mobilization accomplished by the method of finance. But, conceding this, are we willing to wait that long? Dare we wait that long? Will two years be vouchsafed to us in which to get ready to give our maximum aid? Only Mars and Neptune can answer this. But in any event let it always be remembered that the longer we are delayed the greater will be the ultimate cost in both life and property.[1]

It will be of interest at this point to present, as a practical check upon what some may be disposed to regard as academic theorizing, certain statistics recently prepared by the general staff of the United States Army. Table I is taken from War Department, Document No. 527. (W.C.D. 8121–39.)

These "tables of organization" were made in 1914, and are supposed to represent unit cost per division. It will be apparent, however, that the larger the scale of military operations becomes, the more the percentages in this table will be shifted to the right, that is to say, the larger will become the proportions that cannot be obtained on short notice. As the table stands, however, it will be observed that over 90 per cent of the ordnance supplies, amounting to almost 50 per cent of the total of all classes, cannot be obtained on three months' notice (how much more than three months might be required the general staff does not suggest). The

[1] At this point I should like to call attention to a fortuitous circumstance which was of tremendous aid in hastening Germany's industrial reorganization. At the outbreak of the war many of Germany's industries which were engaged in turning out uxuries and other dispensables were dependent upon importation for their raw materials. The source of raw materials was at once largely cut off by virtue of England's command of the seas, and these industries were therefore compelled to rehabilitate themselves almost immediately. They had no alternative other than to become munitions factories. But no such external factor will force our nonessential industries to transform themselves immediately. We shall have to wait, in the main, upon the slowly working mechanism discussed in preceding paragraphs. True, I am aware that there are some forcing conditions at work even in the United States. Some of our smaller industrial establishments find, in war time, that their customary raw materials are not to be had at all, or only at exorbitant prices, because of the government's heavy bidding at points farther back in the industrial system. This causes them very quickly to fall into line and join the ranks of those who are turning out supplies and materials for the government. But these cases are too few in number to be of any large service in connection with the process of industrial mobilization.

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overwhelming proportion of the quartermaster supplies, second in importance, cannot be obtained in less than three months; and for procuring nearly all of the signal supplies, third in importance, more than three months will be required.

TABLE I

Kind of Supplies	Total Cost of Each Kind of Supplies	Can Be Obtained in Open Market in Great Quantities at Any Time	Can Be Obtained on Fifteen Days' Notice	Can Be Obtained on Three Months' Notice	Cannot Be Obtained on Three Months' Notice
	One Infantry Division				
		Per Cent	Per Cent	Per Cent	Per Cent
Signal supplies	$ 293,751.35	2.11	0.6	0.2	97.1
Quartermaster supplies	3,283,121.27	1.6	1.6	96.7	.....
Engineer supplies	18,439.67	9.9	2.5	41.8	45.6
Ordnance supplies	4,435,771.20	0.1	0.2	5.8	93.9
Medical supplies	110,059.09	10.0	9.3	80.7	.....
	One Cavalry Division				
		Per Cent	Per Cent	Per Cent	Per Cent
Signal supplies	$ 283,456.37	0.1	0.6	1.5	97.8
Quartermaster supplies	4,716,974.81	1.2	1.6	97.2	.....
Engineer supplies	17,070.77	13.0	2.4	63.7	23.4
Ordnance supplies	3,892,553.94	0.9	0.2	7.9	91.0
Medical supplies	135,145.92	8.9	8.9	80.4	.....

Now in order to save time, that is, to shorten the interval required to produce the necessary supplies, the general staff makes two constructive suggestions:

1. Standardize all articles of clothing and equipment as far as possible, using designs that are ordinarily used by the civilian or which can be turned out in quantity from hundreds of existing factories.

2. Store up, in advance, dies, machinery, and samples of special munitions, so that in the event of mobilization hundreds of factories could be given the special additional equipment which would enable them to begin at once the manufacture of these special munitions.

These suggestions have, however, not been acted upon. But the most significant thing to note with reference to these recommendations is that it had not occurred to the general staff that difficulties or delays might be encountered in inducing these factories

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to begin the manufacture of war supplies, even with the necessary special equipment available. All of the estimates in Table I are based on the assumption that there will be no hesitation on the part of business men in shifting their activities to the service of the government.[1] Business as usual, uniform price control, and undifferentiating excess-profits taxes are not included as decisive factors in the problems. In view of our previous analysis is it too much to say that if we should rely exclusively on financial inducements to shift industry to war channels, we might have to wait almost indefinitely for a considerable proportion of the necessary supplies? We should doubtless charge the delays to governmental inefficiency; but the main causes would lie farther back —in the financial method of industrial mobilization.

IV

Granting the underlying truth of the foregoing argument that extensive readjustment is necessary, many will, nevertheless, insist that any such rapid readjustment as I have indicated would be suicidal. It will be urged that hysterical economy would throw laborers out of employment and generally unsettle the business structure, and that the ensuing depression would render it impossible for us to finance the war. "We must have wages and profits if we are to pay taxes and subscribe for bond issues." Now while this is perfectly true, there need be no fear of a general reduction in the aggregate demand for labor during the war and no fear of a general reduction of profits. Business may well be substantially as usual when measured in *aggregate* quantities; it will have to be *unusual* only as to kind or quality. The coming months will develop enormous industrial activity so far as total demand is concerned. Every ounce of our national energy will be required to meet the needs of the situation. If the business-as-usual advocates distinguished between the *total amount* and the *kinds* of business, one could have no serious argument with them; but in

[1] It has doubtless been assumed by the general staff that slight rehabilitation of plants producing commodities similar to war supplies would suffice to meet the requirements of the situation. Extensive shifting of industrial energy involving the closing of factories and general scrapping of equipment puts an entirely different light on the problem.

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the popular thought business as usual means in the main the same kinds of business we now have, and unfortunately this popular thought translated into action, into the purchase of the usual commodities, tends to be the decisive factor in directing our social energy.

But there nevertheless remains a serious problem in connection with the shifting process. What of the laborers who are thrown out of employment, if by rigid economy we compel a manufacturer of dispensables to close his doors? The answer obviously is that many of them will shortly find work in the production of food, in the building of munitions factories, and in the manufacture of supplies and materials. Some, usually but a few, will find themselves wholly unfitted for a different employment. It is often asked if it is fair to deprive such persons of the means of livelihood? One effective answer is that this is not a time for debating fairness and justice to individuals; if social or military expediency demands a given course of action certain individuals may have to suffer. Another answer that may be made is that these industrial misfits should be taken care of at public expense, out of the funds raised by taxation or bond issues. But, whatever the answer, we cannot let sympathy for these unfortunates stand in the way of diverting the energy of the rest of society to the fields in which it is needed. To see the situation in its true perspective we must center our attention always upon the alternative—that of failure in case we do not effectively mobilize our resources for the business of war.

What now of the employers—the manufacturers—who might find their doors closed as a result of mobilization enforced through this economizing of the people? In so far as they could convert their establishments to war service, well and good, for the new gains might well offset old losses. As for those who cannot devote their plants to war purposes, they will have to stand the losses as best they may. It is their contribution to the war, negative contribution though it may be. It might be urged again that their losses should be underwritten by the government; but this is seldom if ever the way in war times. It doesn't somehow seem quite fair or necessary. But it is nevertheless one of the grave individual injustices of war that those unfortunately placed in the industrial

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system must lose their all, the while their more fortunate fellows make inordinate profits on war orders.

It may also be urged that excessive general economy would result in throwing men out of employment too soon, that is, before places were ready for them in the new industrial order. There is undoubted point to this contention; but it should be recalled that many thousands could have found employment upon the farms as early as April and that it has been impossible to secure sufficient laborers for the construction of munitions plants, shipyards, etc. I am far from arguing that there would be no loss of energy here. It is indeed another weakness of our pecuniary system that substantial loss must be sustained in the transition process. It may be asked here, however, should not the transition take place slowly in order to reduce the losses involved to a minimum? Ordinarily *gradual* readjustment would be advisable, but when we are engaged in a race with time, we must ride roughshod. To delay the transition is to avoid minor losses on the way, it is true, but possibly (again the alternative) it is to incur an incomparably greater loss through failure to get mobilized in time to defeat the enemy. So long as we rely upon economizing as a means of driving industry into the required channels we may almost say that in a crisis such as the present the more rapid and severe that economizing the better. It gains *time*, and *time* is nearly everything.

V

There remains a final and most important problem in connection with this process of readjustment. If businesses are compelled to close their doors, how can they meet their maturing obligations at the banks; and if their loans are not paid, how can the banks maintain specie payments? What is to prevent a general panic and the shattering of the entire credit structure? It is obvious that we have here a different and at the same time an extremely vital problem. We cannot coldly argue, Let the banks stand their losses and charge them to the account of general welfare; for the banks occupy a strategic position in the industrial system. The failure of a single important bank is likely to result in a series of failures and a general disruption of credit, carrying down the

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sound and the indispensable business as well as the unsound and the dispensable. The solvency of the banks must be maintained at all costs, for on them is reared the entire business fabric.

In analyzing this aspect of the problem it is first to be noted that the closing of the doors of a manufacturer or merchant does not always mean that he will be unable to meet his loans at the bank. The modern practice of loaning only when the quick assets of the borrower (after the loan) are twice the current liabilities would in some cases permit the loan to be paid when the business was liquidated. Again, our bankers as a whole are now in a position of unusual strength, with large excess reserves, and they would therefore be enabled to stand substantial losses for an interval—until the new war business should replace the discarded peace business—without being in danger of insolvency.

But in the event of great dislocations of industry and widespread inability to pay bank loans by the failing industries (and this would be likely to be the case if we should economize as rigidly as the situation seems to demand) we could still look to the federal reserve banks for aid. The federal reserve banks have enormous reserves available for just such an emergency, and a policy of liberal rediscounting would probably provide in full measure for the requirements of the situation. Let me not be misunderstood here. I do not mean to say that the notes of the failed businesses should be rediscounted. There would doubtless be sound paper in ample quantity in the form of notes of concerns producing indispensables, together with new paper arising out of the rapidly developing war business. There is necessarily some conjecture here, of course, and there is always the reasonable doubt that even this resort would not suffice. In such an event, if the federal reserve banks should indeed be pressed to the limit of their resources, some of the funds raised by the government could be turned over to the federal reserve banks to meet the requirements of financial mobilization. It would perhaps appear extremely radical, even dangerous, to urge that the government should invade the field of banking and turn its funds directly over to individual banks in distress; it might open the door to political intrigue, favoritism, loose bank management, etc. But it is quite another matter to deposit these

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funds with federal reserve banks under the control of the Federal Reserve Board. Their distribution to the points of tension in the system, to the banks in danger of insolvency, would then be controlled by ordinary banking processes. Since the banks occupy a strategic position in the whole industrial system, such a use of government resources would be entirely justifiable, and one of the most effective it could possibly make. As already indicated, however, it is hardly likely that such a step would be required. The requisite mobilization could probably be handled by the existing resources of the federal reserve banks. In any event, are not the exigencies of the situation such as to warrant a thorough trial of the possibilities of the federal reserve system?

State banks and trust companies not members of the federal reserve system of course do not have direct access to resources of the federal reserve banks, and here lies our chief danger of financial disrupture.[1] Indeed the failure of a number of large state banks and trust companies at a critical moment might endanger the whole credit structure. We have here an excellent illustration of the evils of a dual banking system, half national, half state, half organized, half disorganized, and a powerful argument for an early entrance of the state banks into the federal reserve system. In this connection it is encouraging to note the recent decision of a large percentage of our important state banking institutions to take this step before it is too late.

[1] The Federal Reserve Board has made two announcements of late which give promise in this connection:

1. Provision has been made that notes of non-member banks, the proceeds of which have been used for the purchase or carrying of bonds, might be discounted with the federal reserve banks, with the indorsement of a member bank. (This provision lapses after July 15.)

2. General assurance has been given to savings banks and trust companies that the Board desired in every way to co-operate with them in avoiding shock or disturbance to existing conditions, and stood ready to secure reasonable extension of accommodations at federal reserve banks for the purpose of protecting the interests of such savings banks and trust companies in the event of necessity resulting from the withdrawal of deposits in order to purchase or invest in government bonds.

The policies relate to the dislocations caused by bond issues rather than by industrial readjustment; but they are nevertheless an earnest of what might be done to minimize the losses, and the shock of a period of industrial transition.

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VI

To summarize our discussion of industrial mobilization through the machinery of finance: We have seen that undiscriminating excess-profits taxation and price control and the "business-as-usual" movement run directly counter to the rapid reorganization of industry. We have seen that the method is extremely costly and extremely slow and uncertain at best. We have seen, indeed, that where speed is the all-important factor it cannot be safely relied upon. Is it not important, therefore, that the United States seriously consider the method of industrial conscription?

By industrial conscription the government could transfer laborers from the industries that are unimportant to the fields of production that are imperatively necessary as rapidly as is required, without waiting, possibly indefinitely, for public economizing to force readjustment through the decline of profits and the closing of factory doors. Industrial establishments engaged in manufacturing commodities that are unnecessary for war purposes, could by industrial conscription be forced to convert themselves at once into factories for the manufacture of munitions and other war materials. New construction that is not necessary for war purposes could be halted and the energy engaged therein diverted to the channels where imperatively demanded. Such a system would reduce to a minimum the social loss of time and energy incident to the transition period. *Wisely administered* (note the qualification) upon a basis of what may be called selective industrial conscription it would eliminate a great part of the confusion, disruption, and maladjustment incident to the ordinary financial method of readjustment.

Not only are the social losses involved in the transition less than under the method of gradual readjustment, but the direct losses to capitalists are almost certain to be less. Assume that *time* permits a gradual transition covering a period of two or three years. Would the losses through gradual readjustment by means of the financial machinery be less than through direct commandeering? The former method means vainly struggling along in present lines with lower margins of profits and heavy losses as reduced sales gradually develop; it is likely to mean with any given estab-

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lishment months of loss before bankruptcy and then a considerable interval of no business at all while attempting to fit itself into newer lines of production. Only in cases where the rehabilitation of factories is a simple process can the conversion be made without excessive losses. Even in these cases, however, the tendency will be to delay the fatal step as long as possible, and this means until the pinch of declining profits is no longer tolerable. Under the method of industrial conscription, however, the conversion could be forced before the decline in profits threatens insolvency. And, moreover, the losses attending the entrance into the new lines of industry could be reduced to a minimum by directing capital to the places of greatest need. It is a method, substantially speaking, of carefully planned adjustment by a board of experts acquainted with the entire situation, as against the slow and uncertain method of trial and error by business men who hope and believe that business will continue as usual, and who, when eventually forced from present lines of activity, find themselves only partially or inaccurately acquainted with the government's requirements.

But aside from all this it must be emphasized that the method of industrial conscription saves what is at present more precious than gold itself—it saves time. If selective conscription of men may be justified on the ground that the volunteer system is hopelessly slow and uncertain where speed and certainty are indispensable, may not conscription of industry be justified on the same grounds? If ships, munitions, and food rather than soldiers are to render our greatest service to our Allies, why resort to the method of efficiency in the raising of armies and the method of inefficiency and uncertainty in the raising of crops and supplies?

Shall we answer because conscription of industry is un-American, because it places autocratic power in the hands of a democratic government and strikes at the very foundation of our institutions—private property, vested interests, free initiative, individual liberty, competition, and all the rest? A similar answer may be, and has been, made with reference to military conscription, but we have overruled the objection there mainly on the ground that the time element is so tremendously important that ordinary peace-time principles and ideals have to give way. Much as we may

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dislike the principle and method of conscription, do we not dislike and fear the alternative—the indefinite eclipse of democratic institutions—more?

In one important respect industrial conscription is incomparably less objectionable than military conscription. The man who is compelled to serve in the army is forced to offer life itself in the cause for which he is enlisted; the man who is compelled to close his factory or convert it to different uses; the man who, as a laborer, is compelled to change his employment, at best offers but his services for a smaller remuneration. It is the old question of life versus property. The nation which protests and believes that there is *all* difference between a prize court and a submarine—between temporary detention of our ships and their cargo with legally determined compensation after the war and the sinking of our ships and citizens without a warning—can make so far as justice is concerned only one decision on the question of industrial versus military conscription.

The method of industrial conscription obviously raises enormous problems of its own. How shall we provide the machinery necessary to its successful administration? Who shall be given the power to decree life or death for industrial establishments in the exercise of the selective requirements of the plan? Who shall decide what industries are important to keep alive in war time—for recreational and cultural purposes as well as for physical and military requirements? What man or what body of men can be found with the necessary omniscience, with the requisite prevision, for such a method of industrial reorganization? I have spoken of a board of experts, but a friend of mine remarks: "We may call them experts, but that does not make them really expert; they would be sure to make no end of mistakes; they are not in a position to determine in anything approaching a scientific manner what lines of human endeavor count for most." That there is point to such contentions in piping times of peace I would be the last to deny, but in time of war the problem is profoundly changed. An administrative board giving its entire time to the study of the situation could, it seems to me, determine and guide with considerable wisdom the apportionment of our national energy. The insistent

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demands of the war department for ships, for munitions, for supplies, furnish abundant evidence of the things that are needed most; the demand side of the problem certainly has no insuperable obstacles. The determination of what particular commodities shall be dispensed with is perhaps not so simple a task. But could not any of us upon reflection think of a score of commodities that are less important for war purposes than shells, than food, than shovels, than airships? We need not look for 100 per cent efficiency in order to justify the effort. *Any* percentage of efficiency would be a net gain over the present method of sheer inefficiency.

For great as are the problems of industrial conscription, and many as are the mistakes and blunders that would doubtless be made in its administration, is it not more to be trusted than the uncertain financial method of reorganization through the economizing of the people? Recall that the method we have been following relies for its success, not upon the concentrated thought and efficiency of a board of experts imbued with a national point of view even if not possessed of the requisite experience; it relies rather upon the individual self-interests and the unreasoned impulses of the masses of society. Each and every business man, each and every laborer, for individual reasons, resists giving up his accustomed activity as long as possible. And when it comes to economizing as an agency for forcing industrial readjustment it must be remembered that normal consumptive desires press hard upon us. Self-denial and rigid economy come hard enough, even when we fully recognize the need. Recall also that the method relies upon the advice of good people concerned over the suffering that will be entailed in the process of transforming industries; of business men and bankers who plead that business must go on as usual or the nation will be unable to finance the war; of the producers of luxuries who urge that we must avoid at all cost the evils of unemployment; of piano manufacturers who plead that when the whole earth is out of tune some one must keep in motion the music of the spheres; of the professor who insists that our colleges and universities should go on as usual lest in these hours of darkness the torch of knowledge and civilization be extinguished.

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VII

In a preceding paragraph attention was called to England's eventual abandonment of the unaided financial method of industrial reorganization. In September, 1915, a Priority Committee was formed, which in March, 1916, became a full-fledged department of the British Ministry of Munitions. This department developed a simple classification of industry, whereby any contract placed by the Ministry of Munitions, War-Office, or Admiralty must be filled before the needs of ordinary industry are met.[1]

The United States has also discovered that some central control of industry must be developed by means of which materials vitally required for the prosecution of the war may be prevented from going to fill the demands of non-war business. We have discovered in five months what England found out in thirteen—that the financial method cannot be relied upon with safety, that it must be supplemented by centralized control. Our War Industries Board, under date of September 21, 1917, makes public a priority classification as follows:

Class A comprises war work: that is to say, orders and work urgently necessary in carrying on the war, such as arms, ammunition, ships, etc., and the materials required in the manufacture of same.

Class B comprises orders and work which, while not primarily designed for the prosecution of the war, yet are of public interest and essential to the national welfare, or otherwise of exceptional importance.

Class C comprises all orders and work not embraced in Class A or Class B.

There are various subdivisions of these classes, indicated by a suffix number, thus: A1, A2, etc., B1, B2, etc.

All orders and work in Class A shall take precedence over those in Class B and those in B shall take precedence over those in Class C.

When rigidly applied to such fundamental materials as iron, it will be readily seen that this priority system reaches into nearly every branch of industry and that people who wish iron

[1] There were numerous subclasses, similar to that of our own priority classification given on the next page.

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and steel for ordinary industrial requirements will be forced to wait —and wait indefinitely, since the demands of the war industries are certain to be simply insatiable.

But while this method will insure the diversion of materials to war purposes it still remains a negative rather than a positive system. It does not directly commandeer industry and decree that certain industries shall be closed down or converted to war business, *nolens volens*. It is at best a partial measure, though a tremendous improvement over the unaided financial method of industrial reorganization.

England has at last discovered that priority alone will not suffice. This last year England has in fact gone all the way and now has virtual industrial conscription. England eventually found that, with ultimate victory dependent upon ultimate resources, her reorganization of industry must go to the very foundations of her national life; she found that her man power and her machine power must be expended with an eye single to military victory—she found that every ounce of energy devoted to the production of luxuries and nonessentials was an ounce of energy taken away from the creation of the war supplies upon which her very life as a nation depended. In the words of H. R. Brand, vice-chairman of the British War Mission, "The government has of necessity compelled the whole of British industry to produce for war and to produce what it is told to produce. No man is free to do what he likes with his labor and capital, with his ships, or with his steel. Many trades have been actually compulsorily shut down and the labor taken from them and handed over to war industries. . . . . Instead of gramaphones the gramaphone company now makes fuses; instead of cloth for ordinary clothes the woolen factory makes khaki; instead of motor-cars the motor-car maker makes shells."[1]

We are engaged in a mortal struggle with a nation that has long since learned the lesson of industrial mobilization. Do we marvel at Germany's powers of resistance? Have we not all wondered how the Central Powers have been able to finance the war? Let us remember that Germany has since early in the war followed

[1] Address before American Bankers' Association, September, 1917.

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largely the method of industrial conscription. The Germans are not wasting their national sustenance like sailors in a drunken orgy. They are down to the brass tacks of the situation. As soon as it became apparent that the war would be long the German government promptly abandoned the price and profits method of industrial reorganization, and substituted therefor the method of commandeering. A certain percentage of the energy of the Teutonic Powers was, through the central authorities, directed to the fighting units on the various fronts, a certain percentage to the production of munitions and other army supplies, a certain percentage to the construction of submarines, and a certain percentage to the production of foodstuffs. The principles of military organization were thus universalized and made to apply to every aspect of national life. The ability of the Central Powers to hold out indefinitely depends, therefore, not upon finance, or the amount of the national debts, for national debts owed to one's own citizens are merely the paper claims of individuals to present and future national wealth; the Teutonic power of resistance depends rather upon the ability of the armies in the field to hold the lines; upon the ability of the agricultural quota to produce enough food to sustain life and physical efficiency —in short, upon the working strength of each part of the great national machine. The Central Powers are conserving every ounce of their energy. The vastly superior resources of the Entente nations may indeed bring us victory in the end whether we squander our patrimony or not; but it should never be forgotten that the wasteful method is also the tremendously costly method—costly in terms of property and costly in terms of human life.

The brains at the head of the German organization doubtless counted on our resorting to the slow and uncertain *financial* method of industrial rehabilitation when the fateful decision was formed to make unrestricted use of the submarine and sink at sight. As we enter the struggle before us shall we heed perhaps the greatest lesson that the war has taught to those who have been through the fire? In choosing our method of industrial reorganization, will it not be salutary always to have in mind that it is with Germany and Germany's methods that we are competing?

France, through a negative process, has had what amounts to conscription for industry from the very beginning. Three-quarters

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of the male laboring population between the ages of eighteen and forty-five was called to arms literally over night. As a result French industry was paralyzed. In the course of a few months, when the pressure was somewhat lessened on the Western Front, the government recalled from the lines skilled mechanics and laborers whose greatest service henceforth lay in rebuilding the shattered industrial life. But when recalled for industrial service they were directed to the production of only such commodities as were imperatively required for the successful prosecution of the war. Working with women and children and with imported Spanish, Portuguese, and Italian laborers, they have succeeded, in spite of the German occupation of France's richest industrial area, in producing great quantities of the supplies and materials required by the armies at the front. Does anyone imagine that France could have held out during the long months of waiting for her allies to get ready if these men who were recalled from the trenches had been set to producing luxuries and nonessentials?

The end has not yet been reached in this country; indeed, the government has now clearly seen the handwriting on the wall, and we are almost at the parting of the ways. In a recommendation made late in October by the Council of National Defense, we find this significant statement:

> New enterprises which are not fundamental to the efficient operation of the countries' *necessary* activities should not be undertaken. . . . . All effort should be centered to help win the war. . . . . Men who are considering new enterprises—public improvements, dwellings, factories, industrial work of every description, etc.—should be guided by this acid test.

So much for *new* business.

Even more significant of the developments in store for us are the words of the final paragraph:

> The action of the Council of National Defense should *prepare the minds* of business men for similar action in regard to the *full operation* of those industries not essential to the national defense, or to the consumption by the public of luxuries and non-essentials. In fact, in the course of time no one need be surprised if during the war the use of labor and materials for *all unessential* purposes is made impossible by regulation or statute.

HAROLD G. MOULTON

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NOTES

WASHINGTON NOTES

INCREASE OF FEDERAL RESERVE MEMBERSHIP

One of the most interesting results of the war in its effect upon American banking has been the notable increase in the membership of the Federal Reserve system. The movement of state institutions into the system had begun immediately after the adoption of the act of June 21, 1917, amending the Federal Reserve act. By this amendatory law there was given to state institutions a distinct legislative pledge that they would not, by taking membership in the system, sacrifice any of their charter powers. This guaranty was made further influential by an opinion of the Attorney-General of the United States, September 10, 1917, interpreting the new measure in such a way as to release state bank members from the effects of the so-called "Clayton Act," and "Kern Amendment" thereto, which had been intended to prevent the continuance of what have been called "interlocking directorates." State institutions which become members may thus continue their directorates upon the old basis without more disturbance than they would suffer were they not to become members.

The movement into the system, although stimulated by this new legislation and interpretation, continued only moderate during the summer months. Pressure of war financing, and the certainty of conditions requiring collective action on the part of the banks, afforded a more powerful impetus; and, with the opening of the second great loan campaign on October 1, the disposition of many large trust companies to enter the system crystallized in action. A further influence was afforded by an open letter addressed by the President to state institutions generally and issued on October 13. In this letter the President used the following language, appealing directly to the patriotism of the state bankers:

> May I not, ... , urge upon the officers and directors of all nonmember state banks and trust companies which have the required amount of capital and surplus to make them eligible for membership, to unite with the Federal Reserve system now and thereby contribute their share to the consolidated gold reserves of the country? I feel sure that as member banks they will aid to a greater

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degree than is possible otherwise in promoting the national welfare, and that at the same time, by securing for themselves the advantages offered by the Federal Reserve system, they will best serve their own interest and the interest of their customers. I believe that co-operation on the part of the banks is a patriotic duty at this time, and that membership in the Federal Reserve system is a distinct and significant evidence of patriotism.

The outcome of all these influences has been seen in an increase of membership up to October 27, which brings the total capital and surplus of the state members (including those approved for membership but not finally admitted) to about $274,000,000 and their total resources to nearly $3,000,000,000. This gives the system from 68 to 70 per cent of the entire banking resources of the country, while it must be remembered that of those not yet included a large proportion are ineligible, either because of the smallness of the individual capitals or for some other reason. It may thus be fairly said that the Federal Reserve system includes today the essential banking resources of the country and represents the collective reserve strength of the nation.

PROGRESS OF PUBLIC FINANCING

The closing of the second "Liberty Loan" on October 27 adds another chapter of unprecedented interest to the financial history of the United States, and shows the immense financial strength of the country in a light never before thrown upon it. Success in placing this loan adds an issue of $4,000,000,000 of bonds shortly to be outstanding to the previously issued $2,000,000,000 of war bonds and the old national debt still in private bonds before the war. The new issue raises many financial questions of profound interest never before presented.

Chief among these new problems is the relation of the reserve banking system to public finance. Figures for the operation of the reserve banks, up to almost the close of the loan on October 27, show an increase in their holdings of discounted paper up to $272,000,000 protected by government obligations. These constitute about 70 per cent of all discounts. The resources of the system have thus been drawn upon in the course of the financing to only a very moderate extent; and the hope is that, during the coming months, before the placing of any new issue, it will be possible to transfer to the public the interest in the new securities represented by the rediscounts of member and non-member banks secured by government obligations.

The first loan had a notably satisfactory result in this respect, but a small amount of such rediscounts remaining in the hands of the banks

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at the end of thirty days from the conclusion of the operation. Probably the process of transfer will be less speedy on the present occasion, but it will undoubtedly progress steadily. Meantime the notable feature of the financing is seen in the steady issuing of the short-term certificates of indebtedness put out by the Treasury as a means of meeting current needs. These short-time certificates have operated to provide a means whereby the funds of the community have been regularly drawn off for public use, without any dangerous congestion or unavailability of funds such as would inevitably have occurred under the old subtreasury system. The certificates of indebtedness, being made payable at any Federal Reserve bank through which they were purchased, and being held chiefly by banks as a short-time investment, afforded a means of providing exchange for use in paying the subscriptions to long-term bonds. Certificates were thus tendered to Federal Reserve banks in payment for bonds subscribed by banks and their clients, while the funds resulting from purchases both of certificates and bonds were left on deposit with the institutions through which the subscriptions were placed until actually needed to meet government obligations. The whole process has thus been smoothed and made as nearly free from friction as would be possible in so inclusive an operation. This effort to ease the effects of the borrowing is the more necessary because of the increase of tentative estimates of outlay for the current year to nearly $20,000,000,000, while available sources of taxation at their maximum yield will produce not to exceed one-fifth of that sum, and probably an amount materially below it.

Thus far, the chief direct and visible results of the war financing upon financial conditions in general have been (1) increase in the rates of interest paid by private enterprises for both short- and long-term capital and accomodation, (2) withdrawal of private buying support from the usual investment markets, and hence reduction or downward tendency of security prices, and (3) changes in the character of business at banks, industrial enterprises being paid in "cash" for government orders while this cash is obtained through the borrowing process already described.

THE GOLD "EMBARGO"

Incident to the effects of the war financing has been a movement of gold out of the country amounting during the year thus far to more than $100,000,000 net. This exportation has been due to a variety of factors, among them the disturbances of foreign exchange, which have

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produced conditions in neutral countries favorable for arbitrage operations. Other influences have been found in the existence of unfavorable balances of trade with various countries, which in former days would have been settled by triangular exchange adjustments involving some third nation with which our balance was favorable. Special importations due to war requirements have in some cases increased this unfavorable balance.

The movement of gold had, by September 7, reached proportions which called for action, and on that date the President consequently issued his Executive Order and Proclamation vesting in the Secretary of the Treasury authority (derived from the act of June 15, 1917) to regulate the movement of "coin, bullion, and currency." This authority had been exercised through the Federal Reserve Board, and gave rise to the instructions or regulations, issued on September 21 by that body, for the control of these movements.

The regulations thus issued contained three chief elements: (1) a limitation upon the amount of gold to be taken abroad by travelers to $200 for each adult; (2) an announcement that shipments of foreign and domestic paper currency (except good certificates) would ordinarily not be interfered with; and (3) the statement of a policy with respect to gold expressed as follows:

> It will be the general policy of the Board not to authorize the exportation of gold unless the shipment applied for is shown to be connected in a direct and definite way with a corresponding importation of merchandise for consumption in the United States, but in any case authorization will be granted only where the exportation of gold in payment for such merchandise is found to be compatible with the public interest. In reaching its conclusion, however, the Board will consider all attending circumstances in each particular case.

It is the latter point that is of chief interest in this connection, because it lays down in a concrete way the idea that shipments of gold must be sanctioned chiefly as a direct return for merchandise. This, of course, is a departure from the usual conditions obtaining in international trade, where gold is ordinarily shipped to settle balances growing out of large merchandise movements and corresponding to no particular consignment. The new policy tacitly implies that the real purpose in view is that of controlling *trade*—that is to say, of judging from definite data whether or not a given proposed transaction is "compatible with public interest," because the goods to be purchased are needed in the maintenance of national welfare. Other transactions may evidently

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continue if foreign sellers are willing to accept payment in some form of credit—securities, bank credits, or government obligations.

International trade is thus put upon an entirely new, and conceivably very restricted, basis, inasmuch as entirely new and much narrower modes of settlement or payment are left open. This would be true even without the strict control of merchandise exports and imports which is being exercised under the "Trading with the Enemy" act. By way of completing and rendering effective the embargo, the Federal Reserve Board has requested banks not to "earmark" gold. This practice of earmarking has been common in recent years, due to the desire of foreign banks to establish special trust funds on deposit with American banks, which could then be used as a basis for the issue of notes or for other purposes. The effect of such earmarking is to hoard the gold so used, and thus to withdraw it from employment as a banking reserve. The change in methods resulting from the embargo and the prohibition of earmarking thus necessitates an alteration in the habits of the foreign institutions which had resorted to this mode of dealing with gold in the United States.

CONTROL OF INTERNATIONAL TRADE

Complementary to the gold embargo is the almost complete control of international trade established by virtue of the so-called Espionage act (June 15, 1917), coupled with the "Trading with the Enemy" act (Oct. 5, 1917). Taken together, these two acts provide entire control over both importation and exportation—functions now vested in the "War Trade Board" by the President's proclamation made public on October 15. A license system under which permission both for importation and shipment of goods is necessary is being gradually developed; and it may be expected that at an early date there will be a thorough control of foreign trade. This should eventually solve the "gold problem" in the really effective way—by cutting off trade except in those articles in which business is actually desired.

The control thus exercised cannot be expected to exert the same influence as in Europe, owing to the great extent and industrial scope of the United States which permits the manufacture within our own borders of practically every consumable commodity, or of some more or less satisfactory substitute therefor. Control of transportation, through a system of "priorities" already in operation and through the power to direct the distribution of coal, may largely accomplish in domestic business what the system of international trade oversight just sketched

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will do in foreign trade. All in all, a very powerful grasp upon business both in volume and direction has been established; and of this the best exemplification is seen internationally. Taken in conjunction with the fact that both the building and operation of ships are practically in the hands of the government, the new powers of restriction and oversight virtually enable the government to direct our industrial powers as it chooses. The immediate consequence of this situation is undoubtedly to be that of reducing the commanding position we had been rapidly acquiring in international commercial affairs, since our powers will now be chiefly addressed to the task of providing war material. It would seem inevitable that the flourishing foreign trade which had fallen into our hands in so many branches should now decline in scope, due to the diversion of our energies and attention, as well as of all available means of transportation, to other fields of work. This may, however, be accomplished with less or more disturbance to underlying business conditions according to circumstances and the wisdom and skill of methods of administration. These are still to be developed in their full application.

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BOOK REVIEWS AND NOTICES

Social Diagnosis. By MARY E. RICHMOND. New York: Russell Sage Foundation, 1917. 8vo, pp. 511. $2.00.

This is a textbook for social workers—to be precise, for "case workers." "Case workers" are social workers whose function is to deal with individuals and families rather than communities.

The origin and purpose of this book are stated in the Preface:

> Fifteen years ago I began to take notes, gather illustrations and even draft a few chapters for a book on Social Work in Families. In it I hoped to pass on to the younger people coming into the charity organization field an explanation of the methods that their seniors had found useful. It soon became apparent, however, that no methods or aims were peculiarly and solely adapted to the treatment of the families that found their way to a charity organization society; that, in essentials, the methods and aims of social case work were or should be the same in every type of service, whether the subject was a homeless paralytic, the neglected boy of drunken parents, or the widowed mother of small children. Some procedures, of course, were peculiar to one group of cases and some to another, according to the special social disability under treatment. But the things that most needed to be said about case work were the things that were common to all. The division of social work into departments and specialties was both a convenience and a necessity; fundamentals remained, however.

Social Diagnosis is, in short, the first notable attempt to formulate the practices and fund the experience gathered by social workers during a quarter-century of clinical practice and experiment. During this time welfare work, or social work, to use the language of the present volume, has become an occupation and a profession. There were in 1915, for example, 3,968 social workers employed in salaried positions in New York City by private agencies alone. Of these the author estimates that 2,200 were in social agencies doing case work. The others were engaged in whole or in part in "community movements, research and propaganda." The present volume is based in a very definite way upon the experience of these 2,200 case workers and of others in agencies throughout the United States.

In 1911, when Mary Richmond became a member of the staff of the Russell Sage Foundation, she set out to gather and formulate the experi-

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ence of workers in all fields in which social case work was used in the United States. At the outset she availed herself of notes and suggestions contained in fugitive or unpublished papers of other writers whose experience in certain lines of social work had led them to reflect upon its methods and technique. In addition to this a systematic study was made of the records of five different cities of the United States by two experienced case workers. The differences of method were carefully noted. The facts in regard to sources of information used in making diagnoses were reduced to statistical form for comparison.

The task of the author has been to reduce this mass of concrete materials to its elements; to classify, organize, and digest it; to construct, in short, out of an accumulation of observation, suggestion, and practice a working system of concepts and ideas. The task has been well done. With this book social welfare work has ceased to be a mere body of traditional practices and is in a way to become a science. We now have a fairly precise language in which to describe social-welfare facts and a technique for discovering, testing, and interpreting them. Social work thus becomes, not merely beneficent, but intelligible.

It is impossible by any mere catalogue of contents to give an adequate conception of the wealth of material contained in this volume. The first chapter reviews briefly the early attempts to base social welfare work on investigation rather than good will and common sense. The remaining four chapters of Part I are devoted to a discussion of what the author calls social as distinguished from legal or court evidence. The fundamental distinction here is not logical but practical. The difference between social facts and legal facts is the difference in point of view between the social worker and the lawyer.

Part II is a description of the present practices of social workers so far as concerns the investigation of individuals and the family. Separate chapters discuss "the first interview," sources of information, such as relatives, schools, employers, social agencies, medical, neighborhood, and documentary sources.

Part III consists of a series of questionnaires indicating the kind of information that is important to look for in the investigation of different types of cases, for example: the immigrant family, the deserted or widowed mother, the neglected child, the unmarried mother, the blind, the insane, the homeless man.

Although it was written primarily for a special class of social workers, *Social Diagnosis* will interest every student of the social sciences who believes that sociology is ever to be anything more than a philosophy of

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history or an appanage of social psychology. What one sees in this book is social practice struggling to lift its problems to the plane of the general and conceptional point of view; allying itself thus with the great body of systematic knowledge we call science. Social practice is doing this, not for the sake of science, but in an effort to perpetuate and justify its own traditions and technique. It is just in this way that exact knowledge has grown up and superseded speculation in every field of science. *Social Diagnosis* is interesting merely as an illustration of this process.

ROBERT E. PARK

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Government Telephones: The Experience of Manitoba, Canada. By JAMES MAVOR. New York: Moffatt, Yard & Co., 1916. 8vo, pp. viii+176.

The establishment of the government ownership and operation of telephones in the province of Manitoba, according to Professor Mavor's searching historical analysis, has been a most unsavory affair. Certainly it involved features most discreditable to the political party responsible for it. This is, however, only part and not the worst of a long record of political fraud unequaled by that of any other government in Canada. The establishment was a move to bolster up the political fortunes of a party declining in the estimation of the people, and its operation was always dictated, not by sound business principles, but by the political exigencies of the times. The extension of the system into rural districts was a particularly useful expedient, especially just before elections. Professor Mavor doubts whether the system would have fared better in the hands of the Liberal party. Unfortunately it is now impossible for the Liberal party, which is at present in power, to undo much of the harm done. The payment of an excessive purchase price (which, according to Professor Mavor, the Liberals exaggerate), the failure to provide adequate funds for maintenance and depreciation, and the general cloud under which the operation of the system from first to last lies are handicaps which it will be hard to remove. Professor Mavor tells a startling story of wrongdoing that destroyed all that the telephone commissioners (competent men) undertook in the way of efficient management.

While written in an admirable style and well arranged, the book fails fully to convince the analytical reader. It is a well-known fact that Professor Mavor's conclusions on the question of public ownership and

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operation had been arrived at long before this study was begun. The introduction is a statement of the general arguments against public ownership and operation. The conclusion is a statement of how the Manitoba experience exemplifies these principles. Nowhere in the book does one find a systematic treatment of the merits of the system either in Manitoba or elsewhere. Professor Mavor argues that the service in Manitoba has not been improved as much or the rates reduced as much as was promised. The reader is, however, quite convinced that the system was run at a loss and that instead of a surplus a deficit should have been reported in the early years of government operation, but he is not convinced that the favorable side of the question of government ownership and operation has been given its dues. Moreover, while one may feel quite sure that it never had a fair chance in Manitoba, few persons would admit that the Manitoba experience could not be improved upon by other governments. It is conceivable that Professor Mavor would have strengthened his argument and would have been more convincing had he treated one side of the question as systematically as the other. Otherwise it would have been better to have omitted altogether the introduction which deals with government ownership at large. This would have made the book a monograph on the Manitoba experience. As it stands now, it is another argument against government ownership and operation at large.

W. J. DONALD

TORONTO, ONTARIO

Mohammedan Theories of Finance. By NICHOLAS P. AGHNIDES. New York: Longmans, Green, & Co., 1916. Pp. 540. $4.00.

It is not to be inferred from the given title that the book is an all-inclusive study of the Mohammedan theories of finance. The author lays no claim to an exhaustive review of the subject-matter in hand. His interests cover neither the ancient Arab and later Saracen theories and practices of finance nor yet the systems of revenue and taxation of the late modern Mohammedan countries. He is concerned solely with "the theories evolved by Mohammedan writers in conformity with the principles of *shariah* (revelation) on the basis of the financial practices of the early Mohammedan state, particularly during the caliphship of Omar" (p. 199).

By implication, the will of God and the obligation to maintain worship are the basis of the civil as well as the religious institutions of the Moslem world. Accordingly, the author devotes the first part of the

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book to a rather exhaustive and even painfully detailed description of the origin and authenticity of Mohammedan law which seems to consist in a synthesis of the Koran, the sayings and doings of the Prophet, judicial decisions, etc.

Part II is given over to the discussion of the main theme as indicated by the title of the book. Here the author is occupied mainly in tracing the various ramifications of the tax known as *zakat*, meaning alms or charity. This tax is levied on land, cattle, crops, and other forms of property, and in most cases the resulting revenue is distributed personally by those who are so taxed to the beneficiaries of the tax, which include, among others, the poor, the wanderer, the pilgrim, and the convert. And although the people are enjoined by holy writ to a faithful performance of this obligation toward the needy, yet the technicalities to which, according to the author, resort may be had to evade the *zakat* are of the nature which might well serve as object-lessons to the profession of modern legal pettifoggery. The *zakat* seems to correspond in many respects to the poor-rates which were common in early modern England. However, the question whether or not like circumstances gave rise to the former as to the latter is overlooked entirely.

Other sources of revenue enumerated are: mines, poll-tax, spoils of war, and treasure trove.

On the whole, the book must be regarded as a creditable result of tireless effort of which the purpose is to throw some light upon an ancient and crude but yet a definite system of public finance. However, the extent of its appeal, even to the most enthusiastic antiquarian, is a matter of conjecture, since the patience and industry required even for a tolerably intelligent understanding of the text is only surpassed by the patient diligence of the author in the collection and presentation of the material.

Presumably the use of numerous technical foreign terms is inevitable in an investigation of this nature, but the impression of an almost studied effort at mystification might have been avoided without much sacrifice. For instance, it is doubtful if the statement, "The conditions of *zakat's* being *wajib*" (p. 213), is more to the purpose than it would have been if the term "obligatory"—the equivalent of *wajib*—were substituted for the last term in the sentence. Many instances of this character, the reading and the meaning of which might have been simplified, may prove serious obstacles to the proper utilization and appreciation of this work in the hands of the student.

LEON ARDZROONI

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English and American Tool Builders. By JOSEPH WICKHAM ROE. New Haven: Yale University Press, 1916. 8vo, pp. 294. $3.00 net.

The progress of the industrial arts depends directly upon the invention and improvement of machine tools. Modern manufacturing processes have been made possible only as a result of the inventions of the tool-makers of the last century and a half. Realizing this fact, it seems strange that so little attention has been given to the lives and history of the men who made this development possible. This neglect, however, may be understood when we take into consideration certain universal human characteristics. The achievements of the present and future always seem to occupy the public mind to the exclusion of those of the past. And when a glance at the past is taken, it is always those deeds which are spectacular and which have produced results immediately apparent which attract the greatest attention. Thus the prosaic, silent work of the tool-builders, despite its fundamental importance and far-reaching consequences, has been strangely neglected.

This book therefore fills an important place. The important tool-builders of the period from 1775 to 1850, during which practically all the modern tools were developed, were almost without exception English. The lives and works of these men, fascinating in themselves, are told in a straightforward style which causes the casual reader to read on and on. The picture one sees behind the words is a picture of men of strength and power using all their cunning to make the forces of nature do their bidding.

Interesting chapters in the history of the English tool-builders of this period treat of John Wilkinson, a manufacturer of cannon, who by the invention of an accurate boring machine made Watt's steam engine commercially successful; Joseph Braham, the inventor and manufacturer of locks, whose shop was the training school of many later famous inventors; Samuel Bentham, inspector-general of the British navy; Marc Brunel, engaged in engineering in America for many years, who together with Bentham developed a complete set of ship-block machinery of almost modern form; Henry Maudslay, who by combining a wonderful mechanical skill, a pleasing personality, and an unequaled inventive capacity became the unquestioned leader in the development of machine tools; the group of inventors of the metal planer; the mathematicians who worked out the modern system of gearing; Fairbairn, the builder of iron ships; Bodmer, the gunmaker; Nasmyth, the inventor of the steam hammer; and Whitworth, the developer of higher standards of accuracy.

Up to 1850 practically all of the improvements in the design of tools were made in England. A few good mechanics were at work in New England during the last part of the eighteenth century, but the restrictive policy of England and the lack of a wide market prevented them from supplying more than local needs.

The author attributes the rise of American tool-builders after 1850 largely to the system of interchangeable manufacture and the general use of accurate-working gauges. The system of interchangeable manufacture was first used

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in the manufacture of firearms. Eli Whitney, the inventor of the cotton gin, Simeon North, Samuel Colt, Pratt & Whitney, and Robbins & Lawrence were the principal manufacturers of arms who developed this system, and their lives and work are narrated in detail.

The work of Brown & Sharpe, who did much to increase the accuracy of measurements, forms an interesting chapter, and the remainder of the book narrates the spread of tool-building from Rhode Island through central New England, the growth of the brass industry in the Naugatuck Valley, the rise of Philadelphia as a great tool-building center, and the development of western machine-shops since 1880. These last chapters are a chronicle of the achievements of a great number of firms both large and small.

It would be unfair to say that the important lines of development of machine tools have been lost sight of by the author, for except in the last few chapters these are kept well in mind. While it is true that the book is in reality a series of interesting anecdotes, yet taken as a whole it is a well-balanced history of the lives and work of the more important English and American tool-builders from 1775 to the present time.

Contemporary Politics in the Far East. By STANLEY K. HORNBECK. New York: D. Appleton & Co., 1916. 8vo, pp. xii+466. $3.00 net.

Within the last two decades many books have been written on Japan, on China, and on the broader oriental questions. Some have been special treatises, others very general; few have been devoted to the purely political problems and none have been addressed to the giving of a brief history of Chinese and Japanese politics as they bear on the present crisis in the Far East. Professor Hornbeck, one-time instructor of law in the Chekiang Provincial College and in the Mukden Law College, has made a first-hand study of the political problems of the Orient and gives in this book, partly out of his own experience, a story of the genesis and development of the "prominent institutions, motives, and forces" which underlie and contribute to the present situation. The object of the book is to combine the political features in such a way as to furnish a background for a study of present and future tendencies in Far Eastern politics.

The work is written in two parts. The arrangement of the first part is topical rather than chronological and has involved considerable repetition; however, the story is cumulative, each succeeding topic leading to the last part. Book I treats of the political history of China and Japan; it describes how the Chinese people, holding to *laissez-faire* and "responsible government," brought about the downfall of the old régime, inaugurated the provisional government, and incidentally laid bare the Empire to the inroads of the foreign powers; it tells how the Japanese nation, holding to "paternalism" and "divine right," brought about the transition from feudalism to modern times with little more than a social tremor and placed the Empire in the front rank of world-powers.

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To a discussion of contemporary relations between China, Japan, and the United States, the writer in Book II addresses his most serious thoughts. The recent conquest of Korea and Manchuria, the open-door policy, the recent capture of Kiaochow by the Japanese, Japan's Monroe Doctrine for Asia, and the demands of the latter against China in 1915 are taken up and developed as separate problems as they bear on the future of these countries. The writer states that the non-exclusive "protective alliance" proclaimed for the Far East by the Japanese stands as the most stupendous event in recent history of the Orient. The significance and effects of this most daring *coup d'état* will be realized only after the glamor of the present war has passed away.

America has an interest in the Far East. We forced ourselves upon China and Japan and compelled them to open their doors to our civilization; we practically coerced them to accept relations with ourselves and compelled them to use in self-defense "instruments and policies patterned on ours." Thus we have made ourselves parties to the present problem. The question arises, can we withdraw from the scene and allow events to shape the future by themselves? "No amount of present indifference will alter the fact that some day we shall insist that our wishes as to political settlements and commercial opportunities in the Pacific shall be given due consideration." In light of the fact that tremendous changes are taking place in China; that invaluable financial and commercial interests affecting the entire world are being bartered away; that the entire political and economic future of the Orient, even the nature of world-civilization itself, is in the balance—in light of all these facts, can the American people afford to postpone longer a definition of their policy in the Far East? The writer suggests no line of action; his analysis clearly points out that danger awaits further delay.

Die Arbeits- und Pachtgenossenschaften Italiens. By W. D. PREYER. Jena: Gustav Fischer, 1913. 8vo, pp. 228. M. 6.

This work on the origin, organization and operation, results and possibilities of the Italian co-operative societies organized to construct public works and to lease agricultural land will be of great interest to students of labor, of industrial organizations, and of agricultural economics.

The societies organized to engage in the construction of public works are confined to Ernilia. They are an outgrowth of unions organized under pressure of great unemployment to improve the conditions of the laborers by raising wages and shortening hours. The ever-increasing demands of the laborers pressed hard upon the contractors who were held to a fixed price by their contracts. In 1883 a contractor, pressed by the union, found it more profitable to abandon the work and pay a forfeit rather than meet the demands of the workers. The union organized itself into a co-operative society and completed the work to the satisfaction of the authorities. This was the beginning of co-operative societies engaged in the construction of public

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works. Encouraged by the state they gradually increased until on December 31, 1910, they numbered 1,017 with 94,738 members. A number of these societies lease agricultural land which they cultivate to relieve unemployment.

The purely leasing societies occur principally in Sicily and central and south Lombardy. The economic situation giving rise to them the author holds to be the large estates leased to large lessees who in turn subdivide the land among small holders or cultivate it intensely upon a large scale. Where the cultivation is extensive and the number of laborers employed few, co-operative societies have not developed. The leasing societies are the outgrowth of unions organized to improve the condition of the agricultural population which after bitter struggles determined it was to their profit to eliminate the unnecessary large lessee.

The book contains an excellent discussion of the organization and operation of the several types of societies, their technical administration, their financing, and their political relations. The estimate of their results is highly favorable to the societies. The societies engaged in the construction of public works have performed the work as well and as cheaply as private contractors, and more expeditiously and with fewer disputes over the conditions of the contracts. The leasing societies have materially improved agricultural technique and have brought peace where formerly discord reigned.

The last section of the book discusses the possible uses of the societies in solving the agricultural troubles of Romagna and as a means of colonizing the south, which suffers from lack of population.

The author knows Italian conditions at first hand. Although distinctly sympathetic the tone of the work is tempered and conservative. One only wishes for a more detailed and exhaustive account of this most interesting subject.

Appendixes contain extracts of the statutes regulating co-operative societies and the constitution of a leasing society.

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The Making of Rates for Workmen's Compensation Insurance *E. H. Downey* **961**

Social Value and the Theory of Money *Walter Stewart* **984**

The Surplus in Commercial Banking *Harold G. Moulton* **1003**

Extent of Profit-Sharing in the United States; Its Bearing on Industrial Unrest *Boris Emmet* **1019**

Interstate Migration of Negro Population *Wm. O. Scroggs* **1034**

Notes **1044**

Washington Notes: **1044**
Loans and Securities Prices—Control of Foreign Exchange—Growth of Federal Reserve System.

Book Reviews and Notices **1049**

RHODES'S *Workmen's Compensation;* BLANCHARD'S *Liability and Compensation Insurance* (Edith S. Gray), 1049.—FREUND'S *Standards of American Legislation* (H. W. Ballantine), 1050.—FIELD'S *Retail Buying* (C. S. Duncan), 1053.—SCHROEDER'S *Free Speech for Radicals*, 1055.—ELY'S *Conservation and Economic Theory*, 1057.—HERRICK'S *The World Decision*, 1058; COLLINS' *The National Budget System*, 1058.—HEADLAM'S *The Issue*, 1059; GIBBS'S *The Minimum Cost of Living*, 1059.

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THE MAKING OF RATES FOR WORKMEN'S COMPENSATION INSURANCE

Perhaps no phase of workmen's compensation insurance is more interesting, or less familiar, to the layman than the principles and practice of rate-making. If the interested layman be an employer, he has been assured that the rate for his establishment is derived from actual experience, perhaps even that the present rates are the most scientific ever devised by the wit of man;[1] if an academic inquirer, he has learned of pure premiums, loadings, and multipliers, and of various formulae for the calculation of each; but in neither case has he been able to obtain much information as to the actual processes of rate-making.[2] It is hoped, therefore, that a non-technical analysis of these processes may be of value to that growing body of economic students who concern themselves with social insurance.

All insurance rates are made up of two factors: the "pure premium," or actual benefits insured, and the "expense loading,"

[1] Cf. press notice of the National Workmen's Compensation Service Bureau in the *New York Journal of Commerce*, March 9, 1917.

[2] See Scattergood, "The Calculation of Workmen's Compensation Premium Rates," in *Annals of the American Academy*, March, 1917, p. 255; *Synthesis of Rates, for Workmen's Compensation*, Fidelity and Casualty Co., 92 Liberty St., New York.

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or cost of insurance management.[1] These primary factors are so far independent that a separate discussion of them will conduce to clearness. Both, again, are markedly affected by the type of insurance organization; for neither the expenses of management nor the initial pure premium need be the same in the case of an insurance monopoly as in the case of competing insurers.[2] In this country, however, the principles of competitive rate-making have usually been applied (at least ostensibly) even by state monopolies. At the same time the great bulk of the business (probably not less than four-fifths of the total)[3] is carried by competing insurers. The present paper, accordingly, will deal exclusively with competitive rate-making, which is at once the more complex problem and the subject of greater immediate public interest.

I. PURE PREMIUMS[4]

Two features sharply distinguish competitive from monopolistic insurance rate-making: the rates must be "prospective," and they must cover the full ultimate cost of the benefits insured against. Both features derive from the purely contractual relationship of insurer and insured. A competing insurance carrier has no hold upon its clients beyond the term of the insurance contract (in this case usually one year);[5] no guaranty of their continuance except its ability to win their patronage, and hence no power to collect from

[1] Expense loading does not appear as a part of the rate in the case of those state-conducted insurers whose expenses are paid out of public revenues. Such insurers have two sources of income, premiums and appropriations from the public treasury. But in the case of these insurers the premium rates do not represent the full cost of insurance.

[2] See "The Organization of Workmen's Compensation Insurance," the *Journal of Political Economy*, XXIV, 951.

[3] See totals for 1915 cited by H. E. Ryan, *Annals of the American Academy*, March, 1917, p. 245. The totals for 1916 are certainly greater by several millions, but the proportions are probably not much different.

[4] In this country both the pure premium (or net benefit cost) rate and the total premium rates are invariably expressed in cents per $100 of employers' pay-roll. Thus an accident cost of $6,000 on an insured pay-roll of $1,000,000 would produce a "pure premium" of $0.60. This, with the average expense loading of 40 per cent of total premium, would give a premium rate of $1.00.

[5] Even the annual term is not fixed; either party may cancel the contract at any time upon giving the stipulated notice.

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present policyholders the means of discharging obligations which arose under past contracts. To be secure of continued solvency, such a carrier must operate on the "full reserve" plan; that is to say, its premiums must cover, not only the payments to be made within the insurance period, but, as well, the reserves necessary for the final discharge of all claims which arise during the policy term.[1] An insurer, moreover, who relies upon purely voluntary contracts is competitively obliged to sell insurance at a stipulated maximum rate, fixed at the beginning of the policy period. For the employer buys insurance to escape risk and he is so intent upon this point that any uncertainty in the final maximum rate is a competitive disadvantage.[2]

The pure premiums of competitive insurers, accordingly, are not the actual payments made, or even the actual costs incurred, during an insurance year,[3] but the *expected* cost to be incurred

[1] Cf. *Annals of the American Academy*, March, 1917, p. 297.

[2] A fixed maximum rate of premium and an absolute guaranty against losses not covered by the premium are often said to characterize joint-stock, in contradistinction from mutual, insurers (cf. Rubinow, *Social Insurance*, p. 143). But this distinction is rather *de jure* than *de facto*. Legally, a mutual has the right to levy assessments beyond the stipulated premium rate; practically an assessment would be fatal to survival. The successful mutuals in this country all charge, in effect, a fixed maximum rate. Some of the best-managed mutuals maintain as well a level rate of policy "dividends." The net rates of the American Mutual or the Massachusetts Employees' Insurance Association, for example, are as definite and as well understood by policyholders as the net rates of stock companies. In most of the states, moreover, insurance does not relieve the employer of his liability to pay compensation, so that the "absolute guaranty" above spoken of extends no further than the solvency of his insurer, whether stock or mutual.

[3] The insurance year is not, as a rule, the calendar year, but the policy year. Policies usually are issued for terms of one year, or, if for a longer term, are divided into years of account. Thus a policy issued January 1, 1916, will terminate January 1, 1917, and a policy issued December 31, 1916, will terminate December 31, 1917. All premiums, losses, and specifically allocated expenses arising from policies issued in 1916 are referred to the policy year of issue, 1916, so that the policy year, or year of account, 1916, extends, chronologically, from January 1, 1916, to December 31, 1917, and overlaps, in point of time, the years of issue 1915 and 1917. This practice arises from the desire of insurers to distribute their business evenly throughout the year. As a matter of accounting it occasions no confusion and is, indeed, the only feasible method, given business so distributed, of referring losses and expenses to premiums and pay-roll exposure. It results, however, in throwing experience back one year so that in a rate revision in the early part of 1917 the latest available experience is derived from the year of issue 1914.

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within the period covered by the insurance contract. This expected cost is perforce estimated in advance of the insurance period and on the basis of past experience. Two elements of uncertainty are thereby at once introduced into the calculation. (1) The past, even the recent past, never exactly prognosticates the future. Not only are industrial equipment, methods, and personnel forever changing, with consequent changes in the number and severity of work accidents; accident rates apparently are affected also by economic cycles of depression and prosperity.[1] In many, if not most, industries changes in technique and personnel are so rapid that accident experience may be said to become obsolescent in five years' time, while cycles of business activity are so unpredictable that the experience of a series of favorable years may come to be applied to a year of abnormal risk,[2] and vice versa. (2) For the reasons just stated it is only the experience of the recent past which can safely be relied on for rate-making, and the experience of the recent past always contains a large element of more or less uncertain future payments.

To make this last point clear, a rough analysis of compensation benefits will suffice. *Death benefits* commonly take the form of weekly or monthly payment to dependents, either for a stated period or for the duration of presumed dependency. In the latter case, if the payments continue on the average no more than ten years[3] and fatalities are evenly distributed throughout the year, only one-twentieth of the total death benefits incurred in any insurance year will have been paid at the end of the year. *Permanent disability benefits*, in this country, usually are weekly payments for a limited period; if payable for life, about one-fortieth of the whole incurred amount will have been discharged within the

[1] See Mowbray and Black, "On the Relation of Industrial Accidents to Business Activity," *Proceedings of the Casualty Actuarial and Statistical Society of America*, II, 418.

[2] This is precisely what occurred with respect to compensation insurance rates projected in the fall of 1915 upon experience developed by policies issued in 1912 and 1913.

[3] After allowing for mortality and remarriage of dependents and for the age at which legal child-dependency ceases.

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insurance year.[1] *Temporary disability benefits*, in the nature of the case, run for shorter periods; the greater part will have been discharged within the insurance year of incurrence. *Medical, hospital, and funeral benefits* stand in similar case: the bulk of these services are furnished and paid for within a few weeks after the occurrence of the accidents which occasion them. The proportion of incurred benefits which are still outstanding at the end of an insurance year, therefore, will vary pretty directly with the form and amount of compensation for death and permanent disability. Under what might be styled a full indemnity law, which provides pensions throughout the period of disability or dependence, future payments would comprise some 80 per cent of the incurred cost of a single year and more than half of the cumulative pure premiums for a five-year period. Under a limited benefit law, such as that of Pennsylvania, this proportion would fall to about 60 and 25 per cent, respectively.

The large proportion of "outstandings" to total incurred cost would not seriously complicate the determination of pure premiums if the outstandings themselves could be accurately ascertained. Unhappily this is not the case. The cost of recent claims is uncertain because many cases of apparent temporary disability will develop into death or permanent disability. Even with respect to known fatal and permanent cases valuation is no easy matter. The present value of future payments for these cases is affected by both mortality and remarriage, neither of which factors can be satisfactorily measured from existing data. The American Experience Table, for example, is a table of selected lives, whereas industrial accident pensioners are representative of the general population. Death benefits, moreover, are joint, rather than several annuities. Thus the New York Act awards 30 per cent of wages to a widow alone, 40 per cent to a widow and one child, 66⅔ per cent to a widow and five or more children, the pension in respect of each child ceasing at the age of eighteen. The valuation

[1] This assumes an average life-expectancy of twenty years (probably too low) and disregards interest. This true proportion is perhaps nearer 1:36. This proportion will not, of course, hold of minor permanent injuries, such as loss of fingers.

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of such a pension evidently involves the principle of group survivorship. In the absence of appropriate American data the administrative authorities of New York have fallen back upon the Danish Survivorship Annuitants' Table, which gives even higher values than the American Experience Table, because of the exceptional longevity of the Danish population. As to persons permanently disabled by accident it is still a moot point with actuaries whether their longevity is greater or less than that of the general population. If mortality among compensation pensioners is thus uncertain, the remarriage rate is, as yet, wholly conjectural. The New York authorities, again, have relied on the experience of the Dutch Royal Institute[1] as a *pis aller;* but that the remarriage rate of Italian and Slavic widows in the United States will coincide with that of Hollanders in their native land is neither proved nor probable.[2] To make a bad matter worse, outstandings are at present estimated by some fifty insurance carriers, each acting independently and upon no uniform principle.

Thus far it has appeared that compensation insurance rates are projected into the future upon the basis of past pure premiums which, in the nature of the case, will never be exactly reproduced by the future period to which these projected rates apply and which cannot be accurately determined even for the past period from which the pure premiums are derived. The errors arising from both these sources are immensely aggravated by the subdivision of experience into industry classes. Rightly or wrongly, it has come to be assumed on every hand that compensation insurance rates should be adjusted as far as possible to the specific accident cost of each definable industry. Since, however, the unit of compensation insurance is necessarily the entrepreneurial establishment, the attempt to classify industries by degree of accident hazard has resulted in a classification of business enterprises in terms of work performed or product turned out. Some 1,500 risk classes

[1] See Fondiller in *Proceedings of the Casualty Actuarial and Statistical Society of America*, Nos. 4 and 6.

[2] The estimated value for each $100 annual compensation to a widow is $941.046 at age 20, $1,151.593 at age 25, $1,600.95 at age 43 (maximum), and $1,197.493 at age 60; decreasing probability of remarriage more than offsetting mortality up to age 43. The validity of these relative values appears at least dubious.

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have in this way grown up, for each of which a pure premium is to be established ostensibly on the basis of its own experience. Even this is not all. American compensation acts are state, not national, in scope. Both the legal benefits and the spirit in which the laws are administered differ widely from state to state, and even from time to time within the same state, so that experience had under one jurisdiction or under one benefit scale cannot directly be applied to any other. The 1,500 risk classes must accordingly be further split up into thirty or more state units. The ultimate subdivision in most instances, obviously, is too small to afford any dependable indication of accident cost. On the one hand, any particular industry is much more liable to violent fluctuations, whether from technological progress or from economic cycles, than is the whole mass of business enterprise; on the other hand, the smaller the numbers dealt with, the greater the probability of chance deviation. If a given industry or group of industries produces 100,000 accidents annually, the probabilities are strong that the series will be reasonably stable; in particular neither the proportion of deaths, of permanent disabilities, and of long-term temporary disabilities, nor the total number of such injuries per unit of exposure will vary widely from year to year unless in consequence of profound technological or economic disturbance. But when the number of insured workmen in the risk group falls to a few hundreds[1] neither the accident rate nor the accident cost per $100 of pay-roll is a proper basis for prediction.

Various attempts have been made to overcome the deficiency of exposure in the ultimate risk classes by grouping related classifications and by combining the experience of different states in the same classifications. Both methods enlarge the exposure at a more or less serious cost of homogeneity and thereby of dependability. The principles of combination in the two cases are so dissimilar that a separate discussion of each is necessary.

[1] In the state of Wisconsin only 188 risk classes developed as much as $100,000 insured pay-roll in two years' experience (see *Bulletin* of the Industrial Commission of Wisconsin, *Workmen's Compensation Insurance*, August, 1916, Tables VI and VII). A pay-roll of $50,000 per annum would correspond to something less than 100 full-time workmen.

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1. One obvious method of combining classifications is to throw together those risk classes which have produced approximately the same pure premiums. This method is actually applied in the sense that the number of rate gradations is very much less than the number of risk classes. But these rate groups, or grades, are used only for the calculation of rates after the pure premiums have been established; they cannot appropriately be used for the determination of pure premiums because they represent only a fortuitous similarity of accident cost in a limited exposure. Furniture manufacturing, brass founding, machinery building, and interior painting and paperhanging may all have developed the same accident cost per unit of exposure,[1] but the component hazards of these industries are so diverse that continued similarity of pure premiums cannot be predicated. On the other hand, the processes and equipment employed in the manufacture of bedsteads, bookcases, chairs, desks, tables, incubators, and refrigerators, are so nearly identical that any divergence of pure premiums in a limited exposure may properly be disregarded, and the rate for each be derived from the combined experience of the group. On this principle the 1,500 manual classifications have been arranged in some 300 groups of industries or businesses which are presumed to be similar in kind and degree of hazard.[2] Unfortunately, however, the subject has not received sufficient study from either the statistical or the engineering standpoint. Many of the existing groups are wanting in homogeneity, while others are separated by arbitrary lines of nomenclature. Hence, the risk groups actually used in rate-making do not strictly conform to the statistical groups nor are

[1] The actual "basic" pure premiums on all these classifications, by the last available experience, is about $0.47 per $100 of pay-roll.

[2] The present industry groups were developed by the statistical committees of the International Association of Industrial Accident Boards and Commissions, and of the National Workmen's Compensation Service Bureau—a voluntary association of some twenty stock casualty insurance companies.

The number of effective rate groups is not easily determinable, but is less than the number of code groups. Thus, engine manufacturing ranks as a separate group, though the rates for each member of the group are in fact derived from the machine-shop and foundry experience. There are numerous similar cases, some of them relics of former rate discriminations, others due to sheer want of courage and insight on the part of code compilers.

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they consistently preserved in successive revisions of the manual. So far are the present industry groups from definitive recognition that it is always a matter of judgment, and often a matter of controversy, at each rate revision, whether the rate for a particular classification should be based upon the specific experience of the class or the combined experience of the group to which it is assigned, or related to the experience of some specific risk class which is deemed to be analagous in hazard. Nevertheless, the use of group experience has narrowed the field of sheer "underwriter's judgment" in rate-making and has removed many former discriminations in particular class rates. A further and great advance would result from a thorough recasting of the present groups upon the basis of systematic engineering and statistical inquiry.

2. The combining of experience from different states would present no great difficulty if only the scale of benefits were uniform or susceptible of uniform grading from a common basis. No doubt the hazards of particular industries, such as coal mining, logging, agriculture, machinery building, or cotton spinning, vary somewhat widely in different geographical regions. Yet such differences, after all, are not perhaps very numerous nor very difficult of determination. It is the immense diversity of benefits for similar injuries which goes furthest to vitiate any comparison of pure premiums produced under different jurisdictions. The percentage of wages payable to injured or dependent beneficiaries, the minimum and maximum weekly benefits, the "waiting period," the rate and duration of payments for death and permanent disability, the amount of medical aid—all differ widely and erratically from state to state, so that no single ratio will hold for all classes of benefits as between any two jurisdictions.

Notwithstanding the obvious objections just recited, rate-making committees have heretofore relied upon single ratios, in the form of flat "law differentials," for the purpose of reducing to a common denominator the pure premiums incurred under dissimilar benefits. The law differential, in this sense, is the ratio between the (computed) ultimate cost of compensation for 100,000 accidents in a hypothetical standard distribution under the given scale of benefits and the (computed) ultimate cost of the same accidents

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under the Massachusetts Act of 1912. The standard distribution employed was worked out by Dr. I. M. Rubinow on the basis of European and early American statistics[1] and shows the number of injuries of each specified degree of severity normally to be expected in 100,000 accidents causing disability for at least one day. The computation based upon this table is modified by a more or less conjectural allowance for medical aid and for the effect of minimum and maximum wage limits.[2] The most that can be said for this method is that no better basis has yet been devised for estimating the relative cost of compensation laws *in advance of experience.* As applied to the *experienced* pure premiums of specific classifications, however, the method is open to very grave objections.

A flat law differential, in truth, rests upon an assumption which is clearly contrary to fact—the assumption, namely, that the distribution of severity of work injuries is the same for all industries. If the proportion of deaths and permanent disabilities and the average duration of temporary disabilities were indeed the same in coal mining as in silk weaving, the detailed differences above spoken of might safely be ignored for the purpose in hand. Unfortunately for the hypothesis, the facts are notoriously otherwise. Ten thousand accidents do not cost the same in the sewing trades as in railroad transportation, nor will the average ratio between the New York and the original Massachusetts scale of benefits hold for either stone quarries or retail stores. By ignoring these differences, the flat differentials distort experience both in the process of reducing experienced pure premiums to the basic level and in the subsequent application of state multipliers to the basic pure premiums so derived.[3]

[1] Rubinow, *Standard Accident Table.*

[2] The present practice is to express medical benefits as a percentage of the computed cost of other benefits. Independent computation, upon the basis of medical benefit statistics classified by severity of injury, would at least avoid cumulative error.

As to the effect of wage limits, the wage-distribution statistics relied upon for most states are woefully inadequate.

[3] The actual process of deriving basic pure premiums consists in adding together the reported pay-rolls and "reduced losses" of all states and dividing the combined "reduced losses" by the combined pay-rolls. The "reduced losses" are obtained by applying to the reported losses of the given state a "reduction multiplier" which is the reciprocal of the law differential. The pure premium for a given state is then

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The weakness of the flat law differentials is well understood by compensation statisticians and actuaries, and the corrective is neither recondite nor impracticable. It consists merely in the analysis of accident costs by severity of injury and the application of an appropriate differential to each injury group—deaths, permanent total disabilities, permanent partial disabilities, temporary disabilities. The one obstacle to the use of this simple and obvious method is that neither insurance carriers nor state administrators have compiled accident statistics in a form appropriate to the purpose. Meanwhile the rates for the leading classifications in important states are derived from the separate experience of the state in question; in other states and for other classifications the basic pure premiums, with all their admitted imperfections, are necessarily employed.

The combined effect of prospective rates, full reserve premiums, over-refined risk classes, and flat state differentials, is to introduce a large measure of conjecture into the most fundamental of all rate-making data—the actual cost of insured benefits per unit of exposure. The basic pure premiums do not truly represent the reported experience and scarcely deserve the reliance actually placed upon them by rate-making committees. What is scarcely less serious, the reported experience itself, even if correctly translated, is not a sufficient basis for prospective insurance rates, because (*a*) the exposure on many risk classes is wholly inadequate, (*b*) the outstanding liabilities may not have been correctly

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obtained by multiplying the basic pure premium by the law differential. Thus the aggregate pay-roll for the classification "machine shops, no foundry," as last reported, was $78,254,573, and the aggregate "reduced losses" $364,666, producing a basic pure premium of $0.466. The Pennsylvania pure premium for 1917 is 1.20×.466 or $0.559.

The distortion spoken of in the text is most serious in the case of New York experience which is at once the largest in volume and the least susceptible of reduction by a flat divisor. Thus, with the reduction factor employed at the last rate revision, losses of $18,900 from New York would count for $10,000 reduced losses, irrespective of the actual components. But if this sum comprised $12,000 for one permanent total disability and $6,000 for one death, the true basic equivalent would be much nearer $5,000 than $10,000. Conversely, the flat differential gives much too small a value for New York when applied to a basic pure premium which comprises a large proportion of death and permanent total-disability losses.

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estimated, (*c*) the reported experience may not have covered the precise range of business which the risk class is intended to describe,[1] and (*d*) the experience relied on may relate to a period of greater or less industrial activity, or of more or less effective accident prevention than that for which the rates are projected. Hence, in the actual process of rate-making, the calculated basic pure premiums are more or less modified by judgment, and a number of more or less conjectural loadings are introduced into the state multipliers.

Judgment is necessarily exercised in the grouping of minor classifications to obtain a combined experience or in the gradation of risk classes within a group or in the assignment of a rate for one classification by analogy to some other for which a large volume of experience has been reported. The indicated pure premiums, again, unless the recorded exposure is very large, are frequently graded up or down on the ground that the reported losses include less or more than the expected proportion of death and permanent disability benefits.[2] It results from these judgment modifications that the "selected" pure premiums for many classifications depart rather widely from the experience indication. In the aggregate, indeed, the pure premiums selected at the last rate revision exceed the calculated reduced losses by some 9 per cent.[3] This judgment

[1] In the last rate revision, for example, the reported experience for coal merchants, fuel and material dealers, stevedores, sawmills and planing-mills, was had under classifications covering a different range of operations from the classifications now in use. About $8,000,000 of pay-roll from Illinois was thrown out of the Masonry N.O.C. classification on somewhat similar grounds.

[2] The average proportion of death benefits to all benefits, upon the total extant experience from New York, Massachusetts, New Jersey, Illinois, Michigan, Wisconsin, Minnesota, Iowa and California, is approximately 20 per cent. This ratio was often referred to by the Augmented Standing Committee, 1917, as a basis for judgment modifications of indicated pure premiums. Such a norm is doubtless a better guide than unrestrained judgment, but it tends to an artificial leveling up of pure premiums. The varying proportion of serious injuries is precisely one of those hazard differences between industries which accident insurance rates are intended to reflect.

Mr. E. E. Watson, actuary of the (monopolistic) Ohio State Fund, has devised a more systematic, consistent, and equitable method of "spreading" death and permanent total disability losses by charging a fixed proportion of each such loss to the specific risk class in which it originated and distributing the remainder over the broad industry group which includes this classification.

[3] Writer's calculation.

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loading is by no means uniformly distributed, but falls mainly upon high-rated industries and minor classifications.

The basic pure premiums, finally, whether selected or calculated, are translated into state pure premiums by means of multipliers which rest as much upon judgment as upon ascertained fact. (*a*) The least disputable of the factors entering into these multipliers are the state law differentials whose weaknesses were adverted to in another connection. (*b*) The law differentials themselves are graded in accordance with the age of the act in question, upon the theory that the cost of compensation progressively increases during the first few years' experience as accident reporting improves and workmen become better educated to their legal rights.[1] (*c*) In the last rate revision, moreover, account was taken of the fact that the experienced pure premiums were derived from several years of normal or even subnormal industrial activity, whereas rates were to be projected for a period of unparalleled expansion. It was commonly believed that the excessive loss ratios indicated by immature experience for 1916 were somehow correlated with this sudden expansion of industry. There was no conclusive evidence of such correlation, much less any quantitative measure of increased accident cost per unit of pay-roll, but the prevailing belief was borne out by certain partial tests and by the common knowledge that the speeding up of industry means more crowded plants, more driving of workmen, more overtime, a greater number of inexperienced employees, and less attention to accident prevention. On this somewhat dubious basis, then, a loading of 15 per cent was incorporated in the basic pure premiums to offset the supposed effect of increased industrial activity. (*d*) Logically antedating all the foregoing factors is an allowance of 2 per cent in the basic pure premiums themselves for underestimate of outstandings in the

[1] The Actuarial Sub-Committee of the Augmented Standing Committee, 1917, upon the basis of a fair volume of experience from California, Massachusetts, Rhode Island and Wisconsin, determined the ratios to be: first year, 1.00; second year, 1.10; third year, 1.15; fourth year, 1.18; fifth year, 1.20. Inasmuch as the pure premium experience relied on, being derived from policy years of issue 1912, 1913, and 1914, answered nearly to the mean of the first and second years, upon a weighted average, these ratios were taken at: first year, .95; second year, 1.05; third year, 1.10; fourth year, 1.125; fifth year, 1.14.

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reported losses. It is doubtful whether any allowance under this head is justifiable in face of the substantial judgment loading already referred to; in any case, the percentage fixed upon implies a degree of accuracy in the determination of pure premiums which has not been, and is not likely to be, realized.

By bringing all these factors together, the pure premium for the state of New York, for example, becomes

$$p=(1.02\pi\times 1.89)(1+.125+.15)=2.4579\pi \text{ *}$$

where π is the basic and p the state pure premium (or expected accident cost), 1.02 the factor for underestimate of outstandings, 1.89 the state law differential, 1.125 the factor for claim cost in the fourth,[1] as compared with the first year of compensation, and .15 the estimated increase of claim cost for current, as compared with a period of normal industrial conditions. In such a formula experienced losses have ceased to be the main element of even the expected pure cost of benefits insured. The basic pure premiums serve chiefly as a guide to *relative* rates; absolute rates are derived in greater part from factors which professedly are not susceptible of mathematical determination.[2]

II. EXPENSE AND PROFITS LOADING

To the pure premium (or expected cost of benefits insured) must be added the expenses and profits of insurance carriers to make up the full sum of insurance cost. Management expenses

* All rates were in addition "loaded" by 1 per cent to offset reductions by experience rating, and rates for classifications subject to schedule rating were increased by a further 9 per cent to offset schedule-rating credits—a curious commentary upon the accident prevention value of merit rating as privately viewed by insurance carriers. The experience-rating factor was incorporated in the state multiplier, but the increase for schedule rating was concealed in the rate symbols. Apparently it was not deemed wise to inform employers that their "merit discounts" are fictitious.

Both these loadings were rejected in Pennsylvania on the ground that the merit-rating system there used produces an approximate balance of charges and credits.

[1] The fourth year of compensation in New York ends July 1, 1918.

[2] Both the basic pure premiums and the derived rates are, notwithstanding, arranged in a hypothetical expotential series, starting with one-cent intervals. The result is to give a fictitious accuracy to rates of which the error may often be as much as 25 per cent. It must be a very innocent layman who is deceived by the meretriciously mathematical rate of $3.03.

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vary from state to state, from industry to industry, and from one type of carrier to another, but the average for stock companies throughout the United States is about 40 per cent of gross compensation premiums, distributed as follows:[1]

	Percentage
Acquisition of business (chiefly agents' commissions)...	17.5
Adjustment of claims (investigation of claims, defense of suits, handling of vouchers, etc.).....	7.0
Inspection of risks.....	4.0
Pay-roll audits.....	2.0
General administration[2] (home office).....	7.0
Taxes and fees.....	2.5
	40.0

At the last rate revision a further loading of 1½ per cent upon gross premium was introduced for underwriter's profit, corresponding to about 5 per cent upon the capital at risk.[3] This allowance appears at first sight very moderate, but when it is remembered that the capital is itself invested in income-bearing securities, that the insurer enjoys a constant return upon unearned premiums[4] nearly or quite equal to the capital invested, and that reserves very commonly are computed at final, instead of present, values,[5] the necessity for any profits loading, *eo nomine*, is by no means obvious. If pure premiums were closely calculated and reserves set up on true present values, the rates might properly carry a margin for

[1] See *Proceedings of the Joint Conference on Workmen's Compensation Insurance Rates*, 1915 (New York Insurance Department), and the (unpublished) Minutes of the Actuarial Sub-Committee of the Augmented Standing Committee, 1917.

[2] Later data appear to indicate that the cost of pay-roll audits is rather less, and general administration rather more, than the foregoing table indicates. The latest returns give about 10 per cent for general administration, including pay-roll audits. But this item, under present accounting methods, is pro-rated upon premium income so that it is impossible to determine whether the proportion properly chargeable to compensation is less or more than for other lines of insurance carried by the same company.

[3] Minutes of Actuarial Sub-Committee, U.S.

[4] Compensation premiums commonly are paid in advance so that about one-half of the premiums in force at any given time are unearned.

[5] Taking all sources together, the largest casualty company in the United States, during 1916, had an investment income of $950,000, or about 15 per cent upon the paid-up capital of $6,000,000. This experience is fairly typical and goes to show that investments will in general afford a sufficient return upon capital at risk.

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underwriting profit. Under present conditions, however, such a loading is justifiable only as a precaution against deficiency in projected pure premiums.

Heretofore the expense and profits loading has been incorporated as a uniform percentage of gross rate, in accordance with the formula

$$R=\frac{p}{1-L}, \tag{1}$$

where R is the total rate, p the state pure premium, and L the loading for management expenses and underwriting profit. Taking L at the average value .415, $R=1.709p$, or $p=.585R$, which being interpreted means that 58.5 cents out of each dollar of compensation insurance premiums are devoted to the payment of compensation benefits. Obviously, however, management expenses do not in fact bear this constant proportion to gross rates. It costs no more to issue a policy for $1,000 annual premium than a policy for $10; in either case, the same forms must be filled out and the same number of entries made upon the insurer's books. The inspection cost, again, is scarcely higher for an iron foundry than for a clothing factory with the same number of employees, though the premium is perhaps ten times as great. Adjustment expenses, also, are smaller in proportion to premiums for the high-rated than for the low-rated classifications and for the high-benefit than the low-benefit states. The cost of handling accident reports, of mailing out voucher checks, of investigating claims and presenting cases for adjudication, is very nearly the same irrespective of the scale of benefits and is higher proportionately for trivial than for serious injuries. Management expenses, in short, vary with the number of risks, the volume of pay-roll and the number and character of accidents corresponding to a given premium income, in such wise that the ratio of total expenses to benefits insured falls as the premium income per risk or per $100 of pay-roll increases. A uniform expense loading, consequently, works injustice to large employers, high-rated industries, and high-benefit jurisdictions. Under existing practice, an employer whose rate is already high because of the inherent hazard of his

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business is further mulcted in overhead charges for the benefit of employers whose total rates would in any case be low.

The inequity of a uniform expense loading was recognized so long ago as 1915 by the Actuarial Committee of the Joint Conference on Workmen's Compensation Insurance Rates.[1] At that time the principle was established that total loadings should vary inversely with the scale of benefits, and a graded scale was adopted ranging from 35 per cent of gross rates in the highest to 42.5 per cent in the lowest-benefit jurisdictions. It is obvious, however, that this principle must be carried further if management expenses are to be equitably distributed as between risk classes in the same jurisdiction. The first step in such a distribution is to relate the functional components of management expenses[2] to their respective bases of incurrence.[3] (1) Commissions and taxes are incurred as a percentage of gross premium and vary directly therewith. Profits, likewise, may fairly be reckoned as a uniform loading upon gross rates. (2) Adjustment costs are more nearly a function of pure premium than of total rate though partly proportionate to the number as well as to the cost of accidents. (3) The cost of inspection and of pay-roll audits is proportionate to pay-roll and number of risks. (4) Home office (general administrative) expenses are properly chargeable in part to number of risks (policy accounts), in part to pure premium (agency and underwriting supervision, investment of reserves, executive salaries, rents, and office expenses not otherwise allocated, and a portion of the statistical cost), and in part to pay-roll insured (accident reports and statistics). In accordance with this analysis the expense and profits loading should logically comprise four factors: (1) a constant percentage of gross premium, (2) a constant percentage of pure premium, (3) a constant addition per $100 of pay-roll, and (4) a fixed charge per policy. The last-mentioned factor may for the present safely be ignored; the excess cost of insuring small risks is more than covered by the existing scale of minimum

[1] *Proceedings*, U.S., pp. 24–26. [2] See p. 976.

[3] Cf. a very able paper by Mr. J. H. Woodward, on "Provision for Expenses in Workmen's Compensation Premiums," *Proceedings of the Casualty Actuarial and Statistical Society of America* for April, 1917.

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premiums.[1] The main object of a graded expenses loading—greater equity as between risk classes—will be sufficiently attained by resolving expenses and profits into three factors.

If, then, a be allowed to represent a percentage of gross rate, e a percentage of pure premium, and K a constant addition per $100 of pay-roll, the rate formula (1) $R=\frac{p}{1-L}$ * becomes

$$R=\frac{p(1+e)+K}{1-a}. \dagger \qquad (2)$$

The values assignable to these factors cannot, in the present state of casualty insurance accounting, be determined with perfect certainty. The expenses proportionate to gross rate a are, indeed, a known quantity; the proper weights of the remaining factors are, to some extent, a matter of inference. The distribution in Table I follows very closely that suggested by a very able compensation actuary, Mr. J. H. Woodward.[2] Fortunately the

TABLE I

ALLOCATION OF LOADINGS IN PERCENTAGES OF GROSS PREMIUMS

Functional Division of Expenses	Total	Proportional to Gross Premiums	Proportional to Pure Premium	Proportional to Pay-Roll
1. All expenses and profits..	41.5	21.5	12.0	8.0
2. Acquisition.....	17.5	17.5	0.0	0.0
3. Pay-roll audits.....	2.0	0.0	0.0	2.0
4. Home office.....	7.0	0.0	5.0	2.0
5. Inspection.....	4.0	0.0	2.0	2.0
6. Claim adjustment.....	7.0	0.0	5.0	2.0
7. Taxes.....	2.5	2.5	0.0	0.0
8. Profits.....	1.5	1.5	0.0	0.0

[1] A minimum premium is the smallest amount for which a risk in a given classification will be insured for one year, irrespective of pay-roll. The present minima range from $10 to $250 for risks of different classes. Mr. Woodward, *loc. cit.*, very cogently argues that the minimum premium is a less equitable method of allocating management expenses than the policy fee.

* See p. 976.

† The formulae below are taken from Mr. Woodward's paper, *loc. cit.*, with slight changes of notation. Unfortunately a standard notation for compensation insurance does not exist.

[2] *Loc. cit.* The table in the text differs from Mr. Woodward's Table A only in respect to claim adjustment.

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proposed method of loading is such that errors in the item weights are partially compensating.[1]

On the basis of the foregoing distribution in formula (2)

$$R=\frac{p(1+e)+K}{1-a},\ a=.215,\ e=.12R,\ \text{and}\ K=.08R.$$

Since, however, the total expense and profits loading is $.415R$, $p=.585R$ and $e=.205p$. The value of K will depend upon the average premium rates to be collected. From the experience reported to the Augmented Standing Committee, 1917, it appears that the average manual rate (excluding clerical office) upon policy issues of 1912, 1913, and 1914 for the entire country was approximately \$0.80 per \$100 of pay-roll.[2] The new rates are probably 25 per cent higher upon an average, or say \$1.00, which would give a value of \$0.08 for K. Substituting, the formula above becomes:

$$R=\frac{1.205p+\$0.08}{.785} \qquad (3)$$

or $1.54p+\$0.10$ (round numbers).

The effect of this formula, as compared with a uniform expense loading, is exhibited in Table II. It will be seen that the proposed loading is graduated from 60 per cent of gross rates upon a pure premium of \$0.10 to 36 per cent upon pure premiums of \$3.00 and upward. The lowest rates, consequently, are sharply increased, while the high rates are decreased by 7 or 8 per cent, and the medium rates (pure premiums, \$0.40 to \$1.00) are but little affected. Of course no particular merit can be claimed for the precise loadings employed in the foregoing illustrations: the proportionate expenses chargeable to pure premium and to pay-roll respectively (values of e and K in the formula) were confessedly derived by judgment and might be considerably varied without greatly affecting the purpose sought. It is earnestly contended, however, that some such scheme of graded loadings

[1] Any decrease in the value of e (formula 2) is partly offset by a compensating increase in the value of K. Thus the values in the text give a rate of \$0.25 for a pure premium of \$0.10 and of \$1.64 for a pure premium of \$1.00, whereas Mr. Woodward's values would produce rates of \$0.24 and \$1.66, respectively.

[2] Obtained by dividing aggregate pay-rolls into aggregate reduced losses and loading the resultant average pure premium by 66⅔ per cent for expenses.

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would conduce to greater equity in the distribution of insurance burdens. This point, indeed, is now conceded by perhaps a majority of compensation actuaries.[1] Underwriters are still disposed to look askance upon so radical a departure from immemorial practice. The principle, however, has been adopted in Pennsylvania and is likely to receive early and serious consideration elsewhere.

TABLE II

COMPARISON OF RATES PRODUCED BY GRADED AND UNIFORM EXPENSE LOADINGS

Pure Premium	Rate with Graded Loading	Rate with Flat Loading	Percentage of Graded Loading to Gross Rate
$0.10	$0.25	$0.17	60.0
0.20	0.41	0.34	51.0
0.30	0.56	0.51	46.0
0.40	0.72	0.68	44.0
0.50	0.87	0.85	42.5
0.60	1.02	1.03	41.0
0.75	1.26	1.28	40.5
1.00	1.64	1.71	39.0
1.50	2.41	2.56	38.0
2.00	3.18	3.42	37.0
2.50	3.95	4.27	36.7
3.00	4.72	5.13	36.5
3.50	5.49	5.99	36.0
4.00	6.26	6.84	36.0
5.00	7.80	8.55	36.0

III. CATASTROPHE LOADING

Catastrophe cost is, in strictness, a part of pure premium. Very few risk classes, however, furnish a sufficient volume of exposure to determine the cost of occasional disastrous accidents.[2] It appears most equitable, therefore, to spread the cost of such disasters over industry as a whole. Data in hand indicate that one cent per $100 of pay-roll (two cents in New York State) will cover the compensation benefits for all accidents which cause five or more

[1] See *Report of the Actuarial Sub-Committee of the Augmented Standing Committee*, 1917, p. 14. The adoption of a graded expense loading was urged by the writer, and by Messrs. Woodward, Mowbray, and Black. The Committee, by formal resolution, approved the plan in principle, but declined immediate adoption on the ground of insufficient time to work out the details.

[2] Coal mining is a notable exception. The explosives industry would perhaps fall in the same category if only it were brought within the pale of insurance experience.

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deaths at one time.[1] The present practice is to treat this amount, not as a constant addition to pure premium, but as a constant addition to gross rate. In this form, however, the catastrophe loading is subject to deduction for commissions, taxes, profits, and ultimate adjustment expense (for catastrophe accidents) which leaves a net value of some seven mills available for catastrophic losses. The precise calculated value would be obtained by adding one cent to K in the graded loading formula (2) hereinbefore proposed.[2] The point is curious rather than important.

IV. ORGANIZATION FOR RATE-MAKING

The foregoing recital should suffice to show that compensation insurance rates are still very far from "scientific." The data are by no means so definite, nor the principles so well established, that rate-making can be relegated to a group of disinterested experts. There is no collection of pure premium statistics in any way comparable to the standard mortality tables of life insurance. For a few states the classified experience of all insurers is officially reported and published; elsewhere experience is recorded only in the private files of insurance carriers. Neither is there any large body of established principles: the most fundamental statistical and actuarial problems are yet in an early stage of discussion.[3] Underwriters' judgment, accordingly, plays a great, often a decisive, rôle in the determination of rates, and the exercise of this judgment gives scope to the play of competitive interests. But the less determinate the ultimate cost of any commodity is the greater the danger of ruinous losses from competitive price-cutting—a lesson enforced in compensation insurance by bitter experience. Hence the felt necessity of organizations for assembling statistical experience, establishing rate-making procedure, and harmonizing opposed views to the end that rates may be reasonably stable, adequate, and equitable. Out of these considerations, backed in several states by official rate supervision, has grown a somewhat loose, but fairly effective, organization for rate-making.

[1] See *Proceedings of Joint Conference*, 1915, U.S.

[2] See p. 978.

[3] Cf. the Casualty Actuarial and Statistical Society of America.

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The rate-making machinery as thus far developed comprises a series of rating bureaus, or associations of insurers, official and unofficial,[1] several insurance departments or other supervisory authorities and a number of joint committees representing both bureaus and departments. Of the last-mentioned bodies the most important are the Standing Committee on Manual Rates[2] and the Standing Committee on Schedule Rating, each composed of three stock companies, two mutuals, a (competing) state fund, and an insurance department. Through these committees are cleared all revisions of rates or schedule rating, whether general in character or pertaining only to particular risk classes. The committees have no official status, their decisions are not binding upon either the constituent bureaus or any supervising authority, and the insurance department, which by courtesy acts as chairman, has only a casting vote without veto. The greatest weakness of the existing organization, indeed, is that rates are necessarily made for separate jurisdictions and subject to separate state supervision so that common action depends upon a very general consensus of opinion. Inasmuch as both the balance of insuring interests and the views and policies of administrative authorities differ from state to state, uniformity of practice is very difficult to maintain. Nevertheless, the recommendations of the Standing Committees carry great weight on account of their balanced composition[3]

[1] The affiliated bureaus are (1) the National Workmen's Compensation Service Bureau and (2) the official rate-making and enforcing bureaus of New York, Massachusetts, Pennsylvania, and California.

[2] The Standing Committee on Manual Rates grew out of a Joint Conference on Workmen's Compensation Insurance Rates (cited above as Joint Conference) held in the fall of 1915 and participated in by the National Service Bureau, the Compensation Inspection Rating Board (of New York), the Massachusetts Bureau, the Insurance Departments of New York, Massachusetts, and Pennsylvania, and the Industrial Commission of Wisconsin. For the general rate revision of 1917 the permanent committee was temporarily enlarged by the addition of two stock and two mutual companies. This temporary body is known as the Augmented Standing Committee, 1917.

[3] Excessive rates, wherever rates are uniform for all carriers, operate to the competitive advantage of participating carriers by increasing the margin for policy dividends. Conversely, large stock companies not infrequently have championed unremunerative rates in order to embarrass competitors. Besides this historic alignment of stock and mutual carriers, there are many cross-combinations and divisions upon particular classifications, determined by the competitive interests of particular companies represented upon rate-making committees.

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as well as of the individual ability and experience of their members. Largely through their influence substantial uniformity throughout the United States has been established in classifications, in schedule rating, and in *relative* rates for the several risk classes.[1]

Neither the present methods of rate-making nor the existing machinery for that purpose, neither the data employed nor the results produced, are wholly satisfactory to insurers or insured. Yet, to anyone acquainted with the rate-making situation in employers' liability days, or even with current practice in other branches of casualty insurance, the progress achieved during five years of compensation experience is full of encouragement. Doubtless, rates will never be so stable or so much a matter of mathematics as in life insurance. The great variety of conditions to be met and the incontinent changes to which those conditions are subject, will always call for underwriting judgment as well as actuarial competition. But as the mass of statistical experience grows and is subjected to more searching analysis, ascertained fact will more and more narrow the field of judgment. In particular, the pure premium values of divergent legal benefits and the pure premium effects of local variations in occupational hazards or of cyclic fluctuations in industrial activity, are all susceptible of statistical determination. It is fairly to be expected, also, that further development of public-rate supervision, which seems now in full course, will lead to a more authoritative and coherent organization for rate-making. Another decade, accordingly, should put compensation insurance rates upon a sound and stable basis, so far as such a consummation can be hoped for under competitive conditions.

E. H. Downey

Harrisburg, Pa.

[1] The "basic manual," in general use, expresses the rates for all states by a uniform set of symbols, with separate key sheets for each state.

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SOCIAL VALUE AND THE THEORY OF MONEY

The theory presented in *The Value of Money*[1] bears an interesting and in some respects a unique relation to the general theory of value and to existing monetary theories. The purpose is to establish a functional theory of money by the use of a social value concept and a social psychology. "Economic social value is an institutional value, specially weighted and controlled by individuals, classes, and institutions" (p. 484). "The function of economic values is to guide and control the economic activities of men" (p. 27). The problem of the value of money, therefore, is to account for the social value of the dollar in terms of the functions which the dollar performs.

The chief functions of money are performed during the process of dynamic change, and so a functional theory of money must be a dynamic theory. "The main work of money and credit is in effecting 'transitions', bringing about readjustments, enabling society, with little shock, to adapt itself to dynamic change" (p. 392). "To talk about the laws of money 'after the transition is completed' is to talk about the work money will do after it has finished working. For a functional theory of money and credit we must study the obstacles that exist to prevent the fluid market. We must study friction, transitions, dynamic phenomena" (p. 266).

This formulation of the problem makes the adequacy of the theory rest largely upon the character of treatment accorded the central facts of psychology and change. A functional theory of money can be established by the use of a social value concept provided the concept is adapted to the analysis of the institutional facts which are regarded as fundamental. A judgment on the theory, therefore, necessarily involves a decision upon the concept used in the analysis. The larger questions to be raised in connection with the theory are whether the method of argument employed

[1] *The Value of Money*, by B. M. Anderson, Jr. New York: Macmillan, 1917, 8vo, pp. xxviii+610.

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is in harmony with the purpose of the theory; whether the presuppositions avowed are the actual working basis of the argument.

Before these questions can be considered, however, it is necessary to present the conclusions reached by the social value theory. This requires, first, a brief reference to an existing controversy in monetary theory; secondly, a sketch of the relations established by the theory between the origin, the functions, and the value of money; and, thirdly, a contrast between the social value doctrine and other monetary theories. Attention may then be turned to the larger issues of method as illustrated in the handling of the problems related to the organization of credit and banking.

I

The social value theory of money endeavors to mediate, at certain points, between two opposing doctrines which it finds in disputed possession of the field. One extreme is the "quantity theory," which regards the purchasing power of money as dependent upon the number of dollars; the other extreme is the "commodity theory," which explains the value of money solely by the value of gold bullion considered as a commodity. These rival theories, as currently formulated, are an aftermath of the political controversy which preceded the adoption of the gold standard. In this controversy a crude quantity theory was turned into a political doctrine. It came to be regarded by some theorists, therefore, as "a most fruitful source of false doctrines,"[1] and they offered in its place a theory which emphasized the dependence of the standard of prices upon the value of gold as a commodity. Other theorists kept their faith in the quantity theory and believed what was needed was a "revision of that venerable doctrine rather than its repudiation."[2] They gave the theory, therefore, a precise expression in an equation of exchange and attempted a statistical verification. To this divided opinion the social value theory addresses

[1] W. A. Scott, *Money and Banking*, 1902, p. 62.

[2] Irving Fisher, *The Purchasing Power of Money*, 1911, p. vii. For an earlier revision, similar in purpose and method, see E. W. Kemmerer, *Money and Credit Instruments in Their Relation to General Prices*, 1906.

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itself, and what it has to say is conditioned by a change in the general theory of value which was contemporary with the development of these differences in monetary theory.

The change of emphasis in value theory from cost of production to marginal significance gave the social value theory an opportunity to revise monetary theory from the viewpoint of marginal significance. The "commodity theory," in its fullest presentation, relied on a cost of production theory;[1] the "quantity theory," in its most detailed statistical proof, held that marginal utility could not be applied to the problem of the value of money.[2] Wieser, Schumpeter, Kinley, Davenport, and Wicksteed, each in his own way, had attempted the application of the marginal utility theory to the value of money, but, lacking a social value concept, each in his own way had fallen into the Austrian circle.[3]

[1] J. L. Laughlin, *The Principles of Money*, p. 361: "The general outcome has been a race between the effects of lowered cost of obtaining gold and a lowered expense of producing goods in general, in which the latter has won." This may be placed in contrast with the opposing theory formulated by Fisher in *The Purchasing Power of Money*, p. 246: "It will be seen that the history of prices has in substance been the history of a race between the increase in the media of exchange and the increase in trade, while (we assume) the velocities of circulation were changing in a much less degree. Sometimes the circulating medium shot ahead of trade and then prices rose. Sometimes, on the other hand, circulating medium lagged behind trade and then prices fell."

[2] Fisher, *ibid.*, p. 32.

[3] Wieser, who, according to Anderson, furnishes "the clearest possible case of the Austrian circle," believes that "the value of money depends on its subjective value in exchange, the marginal utility of the goods which are exchanged for it. But these depend on prices. And prices depend, in part, on the value of money itself!" (p. 89). Schumpeter, who escapes criticism at first "by avoiding assertions as to causation" (p. 98), is finally found guilty of falling into a circle invented by Wieser, a "circle as clear as day" (p. 100). Davenport, so it is held, in explaining the logical sequence on the demand side of the price adjustment overlooks the fact that the *prices* as well as the marginal utilities of alternative goods have to be taken into account, and, further, he assumes the value of money. He "is thus doubly assuming value, the thing to be explained!" (p. 114). Wicksteed, though unusually circumspect, is believed finally to have made an "illicit leap from marginal demand price to marginal utility," and thus he "lapses into the circle in its completest form" (p. 116). Others found guilty of logical circles are J. B. Clark, Cairnes, F. A. Walker, Kinley, Nicholson, and Anderson, *loc. cit.*, pp. 13, 59, 62, 111, 132. Anderson believes his own social value theory avoids the circle because it turns "to the concrete whole of social mental life." But, as he suggests elsewhere, this may be regarded as enlarging the circle instead of breaking it. See Anderson, *Social Value*, p. 152.

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The social value concept, however, makes it possible, according to Anderson, to keep the logic of marginality out of an otherwise inevitable circularity, and to bring the problem of the value of money safely into touch with the doctrines of marginal significance. By recognizing two marginal significances, first, "the social value of gold bullion, conceived of as a commodity," and, secondly, the "additional value which comes to gold as a consequence of its employment as money" (p. 390), Anderson attempts to mediate between the "commodity theory," which "seems to deny that the money employment has any direct effect in increasing the value of money," and the "quantity theory," which "would utterly divorce the value of money from causal dependence on the stuff of which money is made" (p. 144).

One may approximate the social value theory of money, though without doing full justice to the novelty of its viewpoint and conclusions, by the following process of addition, subtraction, and substitution. Begin with an extreme commodity theory, and substitute for its cost of producing gold a theory of marginal significance, being careful to use the social value variety and not the marginal utility of the Austrians. To this value of gold as a commodity add the value arising from the money-employment—that "modicum of truth which the quantity theory contains" (p. 195); a value, however, which is not proportional to the number of dollars, but is the value of the services attributed to the dollar. The mathematical result is not the complete social value theory of money, but the process gives a fair indication of the relation of that theory to the other monetary theories involved.

II

A sketch of the social value theory will serve to indicate the relations which the theory finds between the origin, the functions, and the value of money, and the influence of credit. A summary of the theory is here presented in bare outline.

The precious metals were differentiated from other commodities and became money because they possessed a superior saleability. History, therefore, supports what logic requires—that

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the commodity have value from some non-monetary source before it can serve as money.

The services of money are not all equally important as sources of value. One of them, the "measure of values" function, contributes no value; others, such as medium of exchange function, the "option-bearing" function, the store of value function, and the reserve for credit function, do ordinarily add to the value of money, but in varying degrees and subject to the influences of time and place.

The "measure of values" function, though it is of great social importance, is not a source of value because the service of the dollar as a medium of thought and of expression does not require the actual use of the dollar. Or, to put it another way, thinking in terms of the dollar does not require the ownership of dollars, and the imputation process, being unconcerned about social importances, imputes to the dollar only those values over which ownership gives control. The "measure of values" function yields no differential advantage in favor of the holders of money as against the owners of goods, and thus it is a service the value of which is not appropriable under the institution of ownership.[1]

The medium of exchange function gives the holders of money an opportunity to take advantage of those values created by exchanging. The gains thus made are dependent upon the possession of money and are therefore attributed to the dollar.

The "bearer of options" function, the special privilege which the holder of money has of acting quickly in a rapidly changing market, is another source of value. This function of money is shared with "liquid securities of low yield and stable value, short loans, call loans, or bank-deposits" (p. 425). The share of this service performed by money varies with the fluctuations of "business distrust," an increased burden falling on it during a panic when men convert their securities and deposits into cash, and a

[1] The question remains, for institutional theory, whether the so-called "measure of values" function is a rôle performed by money alone, or whether it is to be attributed in part to other associated institutions such as the system of prices itself. In pecuniary valuation the market "largely dictates the valuations which it afterward equilibrates." See C. H. Cooley, "The Institutional Character of Pecuniary Valuation," *American Journal of Sociology*, January, 1913.

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decreased burden when the return of confidence releases money from the service of "option bearer."

The store of value function is properly to be distinguished from the "bearer of options" function, the distinction turning on the possibility of making definite provision for a contingency. If held for a definite contingency it is the store of value function, but since certain types of bonds may often be more advantageously held for that purpose, in present day functioning money itself is less important as a means of storing value than as a "bearer of options."

The reserve for credit function is a phase of the "bearer of options" function, money differing only in degree from liquid assets—the so-called "secondary reserves." The best substitute for a money-reserve is the call loan, with corporate securities as collateral, the great liquidity of that type of loan being due to its impersonal character and to the activity of speculative trade in the collateral. This freedom of substitution in the reserve function means that the part which money plays in bank reserves is not constant and that there is no fixed or normal ratio between bank reserves or money in circulation and bank deposits.

A conceivable limit upon the expansion of bank credit in the *world as a whole* is contained in the total of the world's gold supply, but inside of this limit, which is never reached, there is great flexibility, and the variations are such as to make it impossible to talk of a normal proportionality between gold and credit. Within a given country the causal sequence between reserves and deposits is the reverse of that asserted by the quantity theory. Rising prices lead to increasing trade and to expanding credit, accompanied by a rise in short-time interest rates which draw gold into the country. Therefore, "increasing reserves are a *result* and not a *cause* of increasing loans and deposits" (p. 532).

The effectiveness of the short-time money rates in drawing gold to a country is apparently due to the fact that those rates are an index to the value of the services of money. "There is at any time a demand curve for this money service, manifesting itself in the money market, a demand for the short-time use of money as a tool of exchange" (p. 72). The loan rate charged by the bank, for example, represents a differential, largely due to superior salability,

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between bank-credit and the borrower's note, a premium on present money funds, "so much money, for the use of money, for such a length of time" (p. 453). When these rates are relatively high in one market they indicate the high value of money-services in that market, and money funds flow in that direction. These rates "are properly to be considered, not interest on abstract capital, but the rent of a particular capital-good, namely, money" (p. 145). This money-market concept of "money" is intended to include bank-credit.[1]

Bank credit represents a fund of rights in liquid form, and, like other kinds of credit, its chief function is to aid in carrying out the readjustments required by dynamic change. Credit accomplishes this by making "fluid and saleable articles of wealth other than money" (p. 476), thus tending to give to all goods that degree of saleability which money itself possesses. A consequence, therefore, of credit extension is a closing of the gap of saleability between money and other goods, so that when "credit has done its perfect work" (p. 478) gold will cease entirely to function as money and have only the value arising from commodity functions. The differential advantage of money will then have disappeared along with all the value-giving functions of money, for with the coming of static conditions only the measure of values function will remain. The disappearance of the differential through the use of credit causes a general rise in prices brought about by the lowered value of money and the increased values of goods.

The rôle of money and credit in economic theory is to smooth the way for static theory by bringing about the fluid market and by overcoming friction. Their function is to give "verisimilitude to the static theory, to make the assumptions of static theory come true" (p. 263). Since all of the value-giving functions of money and credit are performed only during the continuance of dynamic changes, and since static theory cannot make a logical beginning without assuming the value of money, it follows that "the theory

[1] The important influence upon money-rates of banking as a source of loanable funds is not considered, the discussion of the effects upon the interest rate of an increase in money-capital being confined to the increase of standard coin (pp. 223 and 484, note). The theory differs in this respect from the analysis of the loan-fund by Davenport. See Davenport, *Economics of Enterprise*, chaps. xviii, xix.

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of money and credit is essentially a dynamic theory and the notion of 'normal equilibrium' which underlies the quantity theory has no bearing whatever on these fundamental matters" (p. 495).

III

Fundamental as are the differences between the social value theory of money and the quantity theory, there are, however, important similarities in the formulations of the problem which give rise to the respective concepts of social value and of the equation of exchange.[1] Both formulations, for example, find "desirability" an unsatisfactory starting point for the explanation of the value of money, but for different reasons. Anderson finds desirability inadequate, logically and causally, as the explanation of any value; Fisher, though he finds it adequate for other values, believes the degree of desirability unfitted to explain the purchasing power of money, because the desirability of the dollar rests upon its purchasing power. Both theories agree, also, as to the logical necessity of a value prior to particular prices.[2] Anderson finds a "logical resting-place" in the social values antecedent to all prices; Fisher finds it in the dollar of the price-level, which, though it is not temporally antecedent to the particular prices, may be treated as logically independent of and prior to them. Fisher believes "that individual prices cannot be fully determined by supply and demand, money cost of production, etc., without surreptitiously introducing the price level itself,"[3] and so he separates the study of price-levels from the study of particular prices, just as Anderson separates the theory of value from the theory of price. Both of them, therefore, step back of price theory to a concept which is presumably more fundamental, in order to avoid the circularity of reasoning which

[1] As "the most uncompromising of the quantity theorists," Irving Fisher has given that doctrine in *The Purchasing Power of Money* the expression which is selected by Anderson for detailed criticism.

[2] Fisher, *ibid.*, p. 182: "The causation of individual prices can only explain prices as compared among themselves. It cannot explain the general level of prices as compared with money." Anderson speaks of the social value concept as a "causal force, lying behind prices, even though expressed in prices" (p. 87, note).

[3] Fisher, *ibid.*, p. 175.

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both believe to be inevitably involved so long as the theory deals with the system of prices directly.

Beyond these similarities in the conception of the problem, however, the agreements end. No quarter is given. Anderson challenges "virtually every contention and every assumption of the quantity theory; gives the doctrine a detailed examination; attempts a statistical refutation of it"; and finally concludes that "the quantity theory is utterly invalid."

It is not evident that the quantity theory need be overthrown in order to show the advantages of the social value theory. The differences in viewpoint and in assumptions may save one theory from being precluded by the other. And since the disagreements arise out of differences in the assumptions they cannot be settled by an argument over the corollaries. In fact, Anderson's attempt to disprove the theory, after granting its assumptions, does not carry conviction because his argument does not stay within the limits imposed by the quantity theory. The ambiguity in the term "transition period," among other difficulties, prevents the issue being clearly joined. Anderson insists that the term as used in the equation of exchange is a confusion between a logical category and an actual period of time. When his refutation, however, does not use the "transition period" in the quantity theory sense, it does not prove the quantity theory to be false, granting all its assumptions. For it is by means of the omnipresent transition period that Fisher's quantity theory escapes the contradiction of his own figures, and remains, as it was in the beginning, a normal tendency.

Equally indecisive is the argument intended to disprove the passiveness of the price-level, and again it is due to a primary difference in the method of argument. The proposition that the price-level is the passive resultant of the other factors is fundamental to the causal theory accompanying the equation of exchange, and a disproof of the proposition on its own assumptions would overthrow the equation of exchange. But Anderson does not proceed on Fisher's basis of separating the study of price-levels from that of particular prices. This separation is essential to the logic of the equation of exchange, and an argument which fails to recognize it does not furnish a disproof. Anderson's argument begins with a

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change in particular prices, but this, instead of being regarded as a disproof of the passiveness of the price-level, may be regarded as the influence of particular prices during a transition period. The social value theorist may doubt the fruitfulness of making all the assumptions required by the equation of exchange, but upon those assumptions he has not disproved the quantity theory.

Neither the social value theory nor the equation of exchange is entirely adequate to deal with certain aspects of the monetary problem. Both theories have a common limitation in their belief in the singleness of the value of money. The equation of exchange finds the purchasing power of money expressed in a single average of prices; the social value theory finds it in the single psychological significance of the dollar. But it is characteristic of a general change in prices that the degree of change is not uniform between various groups of prices, and that the change does not reach all commodities simultaneously.

Now it is in the interpretation of such a general change and of its relation to the changing monetary and credit conditions that the monetary problem arises. The lack of uniformity in the change, with its implications as to the values of money, cannot be accounted for by a theory based upon a concept which confines the conclusions to a single value. The prices which are averaged into a price-level make in reality a system of prices, and an inquiry into a general change in prices must include a study of this system with reference to the interdependence of its parts. Both the social value absolute and the single average of the price-level blur and conceal those facts of interdependence and their influences on the direction and rate of change in the values of money; both theories are under the temptation of attributing the working of those influences to other factors which can be brought into the scheme of generalization.

When the attempt is made to give a statistical expression to the social value of money a difficulty arises which is perhaps inherent in the absolute value concept itself. Anderson suggests that a measure of this absolute value can be obtained by constructing an index number from "numerous wholesale prices substantially weighted by wages" (p. 382). In fact, the very index numbers used by Kemmerer and Fisher in their attempts to prove the

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quantity theory statistically, though not adapted to their purposes, are said to be "very good" as "*indicia* of changes in the *absolute value* of money." The difficulty with this proposal to measure the social value of money by an index number of prices, becomes evident, however, from a statement made by Anderson in another connection, a statement concerning the relation of the value of money to prices. "Particular prices and general prices may change because of changes in the values of goods, with no change in the value of money. Or, particular prices and general prices may change because of changes in the value of money, with goods remaining constant in value" (p. 389). Now, if this is true, if general and particular prices may change without a change in the value of money, how can it be argued that an *average* of prices may be regarded as an index of the absolute value of money? How can any index number which may vary from either of the values concerned (social value of money and social values of goods) be taken as an expression of the social value of money? Is it true that an absolute value of money can be measured only on the assumption that the values of goods are unchanging; and that the values of the goods, in turn, can be measured only on the assumption of a fixed value of money? And if the social value concept can be given numerical expression only on the basis of these assumptions and within these limitations, how does that fact affect the peculiar advantage which such a concept is held to possess for the analysis of quantitative problems?

Another difficulty arises in Anderson's attempt to distinguish quantitatively between the "original" value of money and the "functional" or "added" value. Money rates are held to express this "functional" value, but not in a way to give a "portion" to be added to a capital value. In the discussion of the gradual appreciation of greenbacks it is held that the value of the money-employment was a factor in bringing them to par before redemption. "This value is, ordinarily, not very great" (p. 147). Later, however, the statement is made "that a considerable part of the value of the standard of value comes from its employment as medium of exchange and as reserve" (p. 328). In the attempt to find how much value is due to the money-form of gold the question is raised

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as to the amount of premium which might be expected on gold coin in case of a suspension of free-coinage, with the conclusion that

> in a country where the bulk of the money work is in effecting small transactions, we might expect a considerable agio for coined over uncoined metal. This would be especially true if that country had few facilities for credit substitutes for the coin, particularly for small transactions. In a country like the United States, however, where checks are often drawn for amounts less than a dollar, and where the bulk of gold, or standard money, is to be found, not in circulation but in reserves, one need not anticipate that the medium of exchange function would give a big agio to gold coin, even if free coinage ceased (p. 445).

Finally, in describing "the equilibrium between the value of gold as money and the value of gold in the arts" (p. 450), the conclusion is reached that "we may get some aid in reducing these complexities to familiar terms if we employ the device of assuming an equilibrium between gold in money and gold in arts, without trying to explain in quantitative terms how that equilibrium is arrived at" (p. 453).

And so, the "original" and the "added" values, the "marginal values" in the arts and in money, remain unassigned and unassignable "portions." Throughout the book, whenever the theory faces a quantitative problem it fails. It fails because the measurement of the social value of money by an index of prices cannot be set free from the influence of changes in the absolute values of goods; because absolute value cannot be given separate expression in money terms—the only common numerical expression of values available in the pecuniary order.

IV

Attention may now be given to those problems which involve an analysis of the credit and banking arrangements. Here the problems of liquidity, the theory of banking reserves, and the account of the origin of money carry the argument of the book into a field where the adequacy of the conclusions depends upon the type of social psychology employed and upon an appreciation of the institutional facts. A functional theory of money and credit, which has set for itself the task of bringing the phenomena of the

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money market into generalizations consistent with the institutional value of money, will find in this field distinctive problems.

A functional and institutional theory is required by its purpose to emphasize the socially organized character of banking activity. It is a disappointment, therefore, when Anderson's analysis of liquidity fails to give adequate recognition to the way in which the banking and credit systems as a whole condition the operations of any particular bank and affect the liquidity of any single item of credit. The only test of liquidity applied "relates to the items separately, on the assumption that other things are not radically changed" (p. 501). The term "liquidity" is used as meaning "that the loan is made to put through a transaction which will be completed during the term of the loan, and permit the loan to be automatically paid off" (p. 501). But can a test which "relates to the items separately" account for the way loans are "automatically" paid off? The "automatic" character of debt payment is largely dependent upon the general condition of credit. The given loan represents only one link in a chain of financing, and its payment depends upon a sale which can often be made only if the prospective purchaser can obtain the necessary credit. The test proposed asks how readily a *single* bank can reduce its loans. But the ease with which any individual bank can reduce its loans depends largely, in the modern money market, upon how easily another lender can be found. The interdependence of banking and credit processes is such that the liquidity of the banking and credit system is fundamental to the question of the liquidity of a single bank or of a particular credit item. An adequate test of liquidity must include a reference to the banking and credit organization as a whole.

The absence of any test for the liquidity of the system may account for the opinion Anderson holds of the call loan as an especially liquid asset—an opinion which does not appear to be justified by the experience of the banks when viewed as a system. It is held that "stock market collateral loans thus constitute the most perfectly satisfactory sort of bank loan from the standpoint of liquidity" (p. 514). "The banker has no doubt that, with watchfulness, he can always realize the full face value of such a note" (p. 493). But banking experience shows that competitive watchfulness has

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not kept the call loan liquid.[1] In the midst of panic, with policies which will not care for them in an emergency, the bankers have had to improvise a method of procedure for dealing with liquidity from the viewpoint of the system. The call loan has served as a method of maintaining reserves for a bank or group of banks largely on the condition that other banks would extend their credit and carry the shifted loans. Under favorable conditions the loan has been shifted from bank to bank in New York, and with rising money rates shifted to London bankers and interior bankers, but repeatedly, when these sources of relief have proved inadequate, the bottom has dropped out of the market, money-pools have been organized as a means of support, and in extreme cases the banks have suspended redemption. In other words, the call loan has been satisfactory as a liquid asset in the New York market, except in those emergencies when the New York market as a whole and upon its own responsibility was in actual need of being liquid.

An inquiry which confines itself to the particular assets of banks cannot give adequate recognition to the dependence of the single bank upon the liquid condition of the system. A theory of the liquidity of the system must include in its generalizations the nature of the organized relationships among banks, the character of the control over the money-reserves of the system, and the policies of the bank or group of banks responsible for that margin of unused lending power by which the shifted loans may be taken over and the expansion of loans in the emergency made possible.

The mechanical separation of the items of credit and the cutting up of the banking organization into unrelated banks leaves the theory at a loss for a functional account of the working of centralized reserves and for a comparative study of banking systems. Take, for instance, the discussion of those "features of the English money market which have made it possible, in the period preceding the war, for English bankers to get on with so little gold. As will appear, it is because English business and financial affairs have been more nearly 'static,' have come nearer to realizing the assumptions of static economic theory, than is true of any other country on earth" (pp. 539–540). That is, by means of credit and the

[1] See Sprague, *History of Crises under the National Banking System*, pp. 84 and 301.

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activity of speculators and brokers the goods for sale in the London market have been made so "fluid" that the market approximates the "ideal credit economy" in which "banks' bookkeeping becomes merely a refinement of barter" (p. 543). "The static law of bank reserves is that none are needed" (p. 544).

Doubtless this construction could be placed upon the phenomena of the money market, if the purpose were merely to translate the institutional facts into a value theory terminology. But for the purpose of showing the influence exerted by the organized thought and activity of men, a functional theory must include among these "features of the English money market" the centralized management of the reserves of the system; the banking policy for action in a crisis; and the feature that more gold flows through London than through any other city in the world. This gold is not merely that stream from one part of the world's credit system to another; it includes, also, that new gold which has not yet functioned in reserves and which the Bank of England has peculiar advantages in intercepting when needed. And surely the ability of the world's financial center "to get along with so little gold" cannot be accounted for without reference to the support it has received in successive emergencies from the gold accumulations of the Bank of France. If, as predicted, "we hear less after the war" about the "'inadequacy' of English banking reserves", it will not be because the Bank of England's gold holdings proved sufficient or because her ordinary policies of drawing gold to London were successful, but because in addition to her reserves, which during the period of the war have included the gold at the mouth of the mines in South Africa, she received from the Allies enormous gold contributions after it became evident that the separate and competitive management of reserves was no longer adequate.

The account given of the origin of money may be taken as a final illustration of the method used by the social value theory in the analysis of institutional facts. The historical accuracy of the account, the book insists, is of no importance, as the purpose is merely "to throw light on the present functioning" of money. The attractiveness of the precious metals as ornaments gave them a superior salability in the barter economy. This was recognized

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by "sagacious men," who laid by a store of the metals against a rainy day. Being imitated by their neighbors the practice became custom and tradition. The ornament of the savage was adopted as the medium of exchange and the store of value for sagacious men and their imitators, and thus the gold standard was established among civilized mankind.

There need be no complaint at this conjectural account of the origin of the early institution of money, but it cannot serve as a substitute for an inquiry into the development of the current institution. A logically conceived method of transmutation from hypothetical barter to the money economy tells nothing of the contemporary institution of money and of its interrelations with other institutions. The purpose of a functional theory requires an account of the derivation of the present monetary arrangements rather than an explanation of the creation of a medium of exchange among the ancients. To take but a single example, "the present functioning of money" is conditioned by the institutional belief in the unchanging value of the dollar, a fact of social psychology which Anderson's social value theory ignores. This belief is, however, a premise of business activity and of accountancy. Being institutional in character it is an unconscious assumption and affects the conclusions of business men without entering directly into their calculations. The belief in the stability of the dollar is one of the important influences affecting the actual variations in its purchasing power. The social value of money, the control the dollar exercises over the activities of men, and the present functioning of the dollar rest upon the fact that men do not fully recognize the fluctuating value of money.[1] A theory which overlooks so obvious and so important an institutional fact falls short of furnishing a satisfactory functional theory of money.

[1] Walter Bagehot doubted the effectiveness of a rationalized institution as a means of control. "Bagehot," says Leslie Stephen, "had dwelt upon the utility of the 'theatrical' elements of the Constitution. It suddenly comes upon him that plain men will take this invaluable element to be superstition and humbug. When you let out the secret that monarchy is really a part of a stage play, it will cease to be an effective control of life."—*Studies of a Biographer*, III, 185.

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V

The general criticism which underlies the foregoing critical remarks is that an inconsistency exists between the purpose of the social value theory and the method of argument employed. Anderson attempts to establish a functional theory of money with a mechanistic logic. In the same mechanical fashion that Fisher studies the variations of the factors in his equation of exchange, one at a time, Anderson invents "a series of hypothetical illustrations to isolate each function, as far as may be" (p. 418). From the mechanical viewpoint there are doubtless advantages in treating the phenomena in this manner—it may even be imperative—but the mechanical viewpoint is not the one avowed by the social value theory. The purpose of the theory raises questions which cannot be answered by the mechanical method. Questions of how the various functions interfere with or reinforce one another in a process where all are involved, of how the service of money in one function is interrupted by the transfer of the dollars to other functions, are questions of mutual dependence. The logic of isolation assigns reasons for each function separately when often the explanation is to be found in the changes of other functions. These questions remain unconsidered, because there is no approach to them by way of a mechanical value theory.

For, after all, the social value dynamic theory is merely an aspect of mechanics. The search is for "a starting-point and a *terminus ad quem*—an equilibrium in which 'mutual reactions' cease to trouble with their endless circle!" (p. 115). The goal of the dynamic period is an equilibrium situation, and the forces at work within it are mechanical forces. Within it "we may see the values not yet in stable equilibrium, but in process of equilibration, with marginal values and prices fluctuating, tending toward a static goal, but hindered by various cross currents, of 'friction,' of uncertainty, etc." (p. 579). The approach is still to the disjoined and the mechanical. The social value theory does not make the phenomena of development and the problems of interdependence an integral part of economic theory. A process of growth cannot be constructed out of a series of transition periods; dynamic theory cannot enliven the static state into a social process.

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There is, of course, nothing self-evidently better about viewing the process as one of development rather than of equilibration, just as there may be no inherent superiority of the functional over the mechanical viewpoint. But the mechanical method will not solve the problem which the social value theory of money has set for itself. By the formulation of the problem and by the presuppositions avowed the theory is committed to a functional analysis and a processive method, but the argument is nevertheless mechanical in character and the conclusions come to focus on the cross-section. The theory aspires to be organic, and yet the functions of money are treated as if they did their work in isolation, not in interdependence. Institutions, the central psychological facts in the formulation of the problem, call for an analysis of cumulative relations in time, but cumulative causation is not a sufficient reason in the social value theory.

In the place of a study of the influence of institutions upon one another the theory attempts to bring all the institutions under the single category of social value. Thus institutions evaporate into social values, and the analysis is left without the psychological data it set out to explain. The term "social value" is given both to institutions and to the quality of a good, and somewhere between these two meanings institutions get lost or get beyond the reach of analysis. Social value is apparently made the quality of a good in order to objectify it to the individual. In the light of a revised psychology Anderson concluded that economic utilities ought not to be left in the mind of the individual and so he converted them into an attribute of the commodity, and named them social value. Thus the theory drops the concept of the economic man, who reflected the institutions of the eighteenth century, and adopts the concept of social value which makes the goods reflect the habits of men. Either method is equally fatal to an interpretation of institutions in their own right.

Tested by the treatment accorded the monetary problem the social value concept does not appear to be adapted to the task of establishing a functional theory of money. In order that the individual may be objectively controlled it is not necessary that the institutional value of gold and of money be attached as a quality

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to the dollar; for the institutions themselves may be regarded as exercising an objective control over individuals. Anderson, however, places upon the dollar the burden of the whole pecuniary order. He says that during a certain period in history the precious metals had "a high value per unit, since so large a portion of the social energy of motivation attached itself to them" (p. 414). And, again, that "where the mechanic uses a storage battery, charged with electricity, to move material things, the technologist of economic readjustment employs a dollar, charged with social value, which is power over the action of men" (p. 591). Thus the theory obscures the distinction between the value of a unit of the circulating medium and the influence of those pecuniary institutions under whose constraint and guidance the economic process is directed and controlled.

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THE SURPLUS IN COMMERCIAL BANKING

The surplus is generally regarded as one of the strongest "talking points" in bank advertising. It is not uncommon to find it printed on a balance sheet in red or heavy black type, in order to direct specific attention to this presumably significant item. The comments accompanying the bank statement, moreover, usually lay especial emphasis upon the accumulation of a large "surplus fund," pointing out that this is an evidence of the growth of the bank, and also of its great strength and safety. The current phrase is that "the surplus fund has been accumulated for the added protection of depositors." Upon reading this statement the prospective but timid depositor may be expected to exclaim: "My money would certainly be safe in a bank with such a great surplus fund." To the rank and file of laymen the surplus undoubtedly appears to be a sort of cash reserve which is to be used for the protection of the bank's customers in the event of unusual losses.

The function of the surplus as viewed by the framers of our national banking law and by writers on banking theory may be indicated by the following quotations:

The national bank act provides that each national banking association

> shall, before the declaration of a dividend, carry one-tenth part of its net profits of the preceding half year to its surplus fund until the same shall amount to 20 per cent of its capital stock.

Pratt's Digest advises that

> a surplus fund should be created from the earnings that will be a protection to the capital and to creditors in the trying times that sooner or later overtake all banking institutions. There are few items, if any, that look better upon a balance sheet than a large surplus, and none so well calculated to secure for it public confidence.[1]

Scott[2] writes that "surplus funds may be accumulated as a means of meeting temporary losses without infringing upon the

[1] *Pratt's Digest of National Banking Laws* (1908), p. 243.

[2] Scott, *Money and Banking* (revised ed.), p. 132.

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other resources of the bank"; while White contents himself with saying that the surplus is "set aside as a permanent addition to the guarantee fund."[1]

Fiske states that "sometimes a bank starts with a surplus contributed by the shareholders in proportion to their quota of shares. This strengthens the position of the bank and gives it resource against early loss without entrenching upon capital."[2]

H. Parker Willis, secretary of the Federal Reserve Board, makes a more extended statement of the service of the surplus than any of the others. He says:

> The surplus acts as a buffer in the event of serious loss or the failure of certain assets to materialize as they had been expected. In the case of a $100,000 bank with $20,000 surplus, if a dishonest cashier disappears with $15,000 in cash, the bank is still left with its capital intact and $5,000 of additional funds. Had the bank possessed no surplus the capital would have been impaired to the extent of $15,000 and the result would have been a necessary reorganization for the purpose of either reducing the face value of its capital stock to an amount corresponding to the reduced net assets (in this case $85,000) or else a call upon the stockholders to make good $15,000 in pro rata contributions in order to restore the capital to its face amount.[3]

The purpose of this paper is to challenge not merely the popular conception of the significance of the bank surplus, but also the theory of the surplus account as incorporated in the banking legislation of this and other countries and as expounded in the standard treatises on banking. An attempt will be made to show that the creation of a surplus does not, in fact, necessarily strengthen the position of the depositors; indeed, we shall attempt to show that inasmuch as the principle of double liability of shareholders has not been made applicable to surplus, the creation of a surplus may even lessen the ultimate security of the depositors.

I

The popular conception of the bank surplus merits a moment's consideration here, for it is not confined merely to the layman; it is found in the most unexpected financial quarters. As already

[1] White, *Money and Banking* (3d ed.), p. 214.

[2] Fiske, *The Modern Bank*, p. 31.

[3] Willis, *American Banking*, pp. 149–50.

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indicated, the "surplus fund" is regarded, so far as the general public is concerned, as a sort of cash reserve. That is to say, the surplus, which is a statement on the liability side of the balance sheet of the owner's interest in the business arising from accumulated profits, is conceived of as a resource in the form of actual cash; when, in fact, it is represented on the resources side of the balance sheet by assets in general rather than by cash specifically. In a similar way, owing to the ignorance of accounting principles, which obtains even in financial circles, capital and deposits are commonly thought of as cash; whereas they are of course statements of claims against the general resources of the business by shareholders and creditors respectively. It is this that explains the current practice in bank advertising of measuring the strength of a bank by its liabilities rather than by its assets. I refer to the almost universal custom of emphasizing *deposits* (debts) as evidence of the strength of the bank.

We have said that this confusion of mind is not confined to the layman. Evidence of this may be gleaned from a perusal of the foregoing quotations. There appears to be here either much careless thinking or else extremely careless writing. Doubtless not all of these writers are thinking of the surplus as a *cash reserve*, but the choice of words is generally such as to leave the student with an entirely erroneous conception of the function of a surplus. In my experience the lesson most commonly drawn by students from such quotations is that the surplus is a sort of extra reserve fund.

The two following examples, which have recently come to the writer's attention, will suffice to reveal the views of those high in financial circles as to the significance of both deposits and surplus. An editorial in the London *Statist*, in commenting upon the great increase of deposits in the banks of England during the war, refers to this condition as an enormous increase in "cash resources." The writer's plain assumption was that these deposit accounts largely represented actual cash left with the banks. Lord Cunliffe, governor of the Bank of England, on the occasion of his recent visit to this country in the interests of international finance, reported that the Chicago banks were in excellent condition to stand the shock of a war "because of their large reserve and surplus funds." This use

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of the term would seem to imply that the surplus is a sort of supplementary cash reserve, or a fund so invested as to place the banks in a position to secure on short notice additional cash resources.

In order to analyze these various conceptions of the function of the bank surplus it will be necessary to distinguish between a bank as a day-to-day going concern and a bank in liquidation. A commercial bank has a double problem of solvency: it has to maintain, first, *immediate* or *day-to-day* solvency; and, second, *ultimate* or *liquidation* solvency. The law holds that a bank becomes (immediately) insolvent when it is unable to meet current obligations on demand owing to a depletion of the cash reserve. It might thus be temporarily insolvent even though its assets were ample to meet, ultimately, all obligations.

Now whether the creation of a surplus strengthens the ability of a bank to maintain *immediate* solvency will revolve about two considerations: First, does the setting aside of a surplus increase the ratio of cash to deposit liabilities? Second, does it give rise to assets of exceptional liquidity—convertible into cash at practically a moment's notice? With reference to the first question we find that neither banking law nor banking practice ever contemplates holding the resources representing surplus in the form of actual cash. Once the bank is a going concern, the ratio of cash to deposit liabilities (the legal reserve) remains quite unaffected by the creation of a surplus. This may be seen from the statistics of any growing bank over a period of years, and it may also be seen from a glance at the chart on page 1010 in this article. In fact, this chart shows that during a period when our national banks were accumulating large "surplus funds" the ratio of cash to deposits was steadily decreasing.

The answer to the second query is no less definite. The law makes no provision for investing resources arising from the creation of a surplus in assets of exceptional liquidity; in practice such assets are usually quite indistinguishable from any other assets. Clearly then, if the creation of a surplus is of importance, it can be in connection only with the problem of ultimate or liquidation solvency.

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II

The relation of the surplus to ultimate liquidation is a more complicated problem, and its elucidation will require careful analysis. The practical argument in this connection is that since the accumulation of a surplus has increased the bank's assets the creditors will have a larger margin of security in the event of liquidation. That is, even though the resources representing the surplus account are in the form neither of actual cash nor of exceptionally liquid assets, they are nevertheless loaned in one way or another and therefore must eventually be paid in cash. An accurate analysis or test of this view can be made only by the use of sample balance sheets.

In order to save space and to avoid confusion, it will be advantageous to employ some greatly simplified statements of condition. Let us assume a bank with a capital of $100,000 that does not issue notes, and that does not have to spend a portion of the funds contributed by the shareholders in purchasing a building, furniture, and fixtures. All of its original resources will, therefore, be available for making loans. The initial statement (at the opening of business) would be as follows:

Assets		Liabilities	
Cash	$100,000	Capital stock	$100,000

As a going concern, assuming no deposits of actual specie, such a bank would shortly show (roughly speaking) the following condition of affairs:

Assets		Liabilities	
Cash	$100,000	Capital stock	$100,000
Loans	500,000	Deposits	480,000
		Interest and discounts collected	20,000

Before proceeding to an analysis of the surplus account we must pause here to explain the statement of condition before us.[1] To the novitiate the situation presented by these figures has three striking features: First, $500,000 of loans have been made, and

[1] The explanation here given contains nothing new, but it has seemed necessary to restate it in this paper in order that the reader who is unfamiliar with the general theory of commercial banking may be able to understand the argument which follows.

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yet the $100,000 of cash originally on hand remains intact. Second, deposits have been created to the extent of $480,000, and the assumption was that no specie is brought to the bank. Third, loans and deposits have increased in nearly equal amounts; indeed, if it were not for the interest being deducted in advance they would have increased in precisely equal amounts.

In order to elucidate these phenomena we shall have to assume first a local community possessed of but a single bank. A goes to this bank for a loan of, say, $10,000. He does not withdraw the amount in cash but instead takes it as a deposit account ($10,000, ignoring for simplicity the discount) against which he may draw checks. This transaction therefore increases loans by $10,000 and deposits by a like amount. Immediately speaking, therefore, the loan has given rise to a deposit account, and we have a (superficial) explanation of the relation between loans and deposits and of the creation of deposit accounts without the actual deposit of specie. But this is only the beginning of the analysis. The borrower does not usually pay interest merely for the pleasure of having a checking account which he has no intention of using. In fact, he will withdraw most or all of his deposit account by writing checks against it. Let us assume that he writes a check for $10,000 payable to the order of B. B has the alternative of withdrawing actual cash or depositing the check with this bank as a deposit account. If he does the latter, the total of "deposits" remains as before: $10,000 has been deducted from A's account and placed to the account of B. Suppose, in turn, B writes two checks of $5000 each to C and D, respectively. C and D bring these checks to the bank and deposit them to their credit. The total of "deposits" remains as before; the names of the "depositors," merely, are different.

The bank under consideration makes additional loans to X, Y, Z, etc., totaling, say, $490,000. This gives rise, immediately speaking, to $490,000 of deposits (less the discount) in the names of X, Y, Z, etc. But X, Y, Z, etc., write checks against their accounts to E, F, G, etc., who deposit these checks to their credit and receive deposit accounts of $490,000. Thus, including the $10,000 loan to A, this bank now has $500,000 of loans and $500,-

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000 of deposits, less the discount. The only questionable part of this illustration is the assumption that each of these individuals who receives a check deposits it with the bank for credit. In fact, not all do this; hence the necessity for a cash reserve. If all deposited checks for credit, no reserve whatever would be required.

This situation is in no wise changed when we assume two or more banks in a given community instead of one. B (above) deposits his check with bank No. 2. Bank No. 2 presents this check to bank No. 1 for collection. But, since bank No. 2 has loaned $10,000 to F who deposits this in bank No. 1, bank No. 1 presents this claim against bank No. 2 as an offset against the $10,000 claim being presented by bank No. 2. The counterclaims balance and are cancelled. This is of course precisely what happens in our clearings for all the banks of a given community. For the banks as a whole in a given community, the creation of loans has given rise to a creation of deposits of roughly the same amount. Loans of bank A emerge and give rise to deposits partly in bank A, partly in bank B, bank C, etc. And loans of bank B, bank C, etc., emerge as deposits in one bank or another in this community. If the use of checks were universal and the machinery 100 per cent perfect, again, no payments would have to be made in cash, and no reserve would be required.[1] It is in fact, however, not a universal nor a perfect system.

But individuals do not confine their business activities to a single community. Some of these checks drawn on local banks are sent outside and are deposited in the banks of other communities. These are then sent home for collection. But as before, cash does not always need to be used in payment. We have district clearings. Counterclaims exist, also, and these are used as offsets, so that, as the saying goes, "Cash moves only as a last resort." At this point of course we come into contact with the machinery of domestic exchange. To make a long story short, the whole country constitutes a banking system, and in this system as a whole deposits

[1] Of course in a sense it is absurd to speak of a perfect system where no reserve would be required; for it would mean that loans and deposits might be indefinitely expanded. With all restraints thus removed the credit system would shortly blow up and burst.

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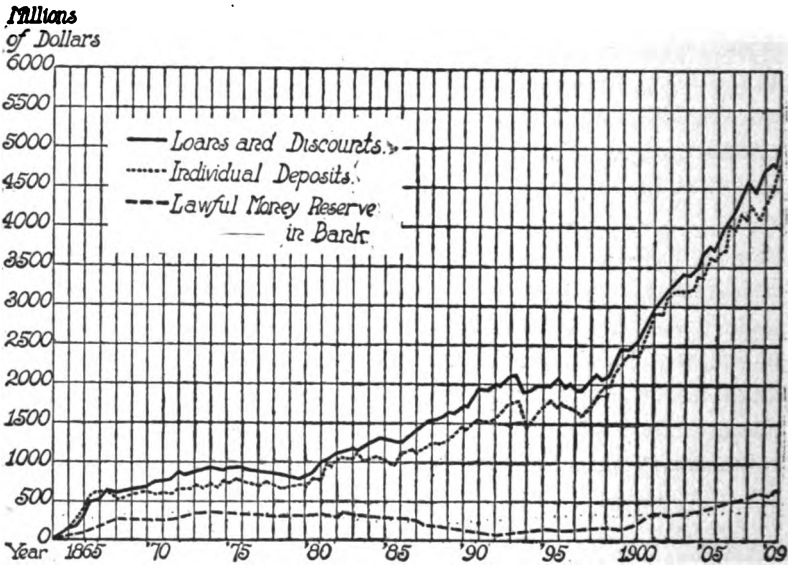
largely grow out of loans and tend closely to parallel loans in amount.

We have been assuming given conditions. How far are such assumptions true in fact? The statistics of our banks as a whole bear out in a very remarkable manner the sort of relationship we have been suggesting. For instance, the statistics for all national banks show the following relations between loans, deposits, and lawful money reserve, from the formation of the national banking system to the year 1909.



The relationship that we have been discussing clearly holds true in surprising fashion for the national banks of the country, as a whole; it also holds surprisingly true for the banks of a given city; and this correlation is not greatly different even with individual banks, though there would obviously be considerable variation from time to time in the case of any single institution.

The variations from an exact equality of loans and deposits, which in fact occur, are due to: (*a*) some withdrawals of actual specie; (*b*) the occasional taking of a loan in the form of bank notes rather than as a checking account; (*c*) the creation of deposit accounts as a result of making advances in forms other than loans;

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and (*d*) deposits of actual specie, which of course do not affect the loan item.

It will be observed from the chart before us that the loans and deposits created by the national banks are not merely five times the amount of the cash resources, as in our illustration above; they are some ten times the lawful money reserve. Were we to include state banks and trust companies this ratio of lawful money to deposits would appear still less.

It should be noted particularly that in the foregoing explanation we have been emphasizing the banking system as a whole. This emphasis is necessary, for it is only by a study of the whole rather than of the individual parts that one can obtain an adequate understanding of the principles of banking organization. It is because the practical banker is thinking in terms of his own single bank that he so rarely appreciates the true nature of these bank deposits. The banker thinks of his depositors as customers who bring funds to the bank. He is likely to argue that he loans out these deposits to borrowers. Loans would, therefore, appear to result from deposits rather than deposits from loans. A check for $10,000 deposited in bank A appears like a deposit of funds available for lending purposes. But the banker usually fails to recognize that the deposit account against which this check was drawn itself originally grew out of a loan by some bank somewhere.

We may now return to a consideration of the simplified balance sheet presented on page 1007. The ratio of cash to deposits in the statement given is 20.8 per cent. The ratio of assets to deposits, and hence the chance of ultimate liquidation, is $500,000 (loans) +$100,000 (cash)—a total of $600,000–$480,000 (deposits), or 60:48 = 5:4.

The same bank in time accumulates a surplus of $20,000. Let us assume that the $20,000 represented by surplus is initially in the form of cash, having been accumulated from earnings[1]. On the

[1] Of course in actual practice the amount set aside as surplus is not represented specifically by a like amount of cash that is not utilized until semiannual dividend date. The process of investing "surplus funds" is a continuous one and not semiannual. For clearness of exposition, however, it is better to assume that surplus is represented by cash and that its investment follows rather than precedes the formal setting aside of such a fund.

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basis of this new cash the bank now proceeds to expand its business by making additional loans. As a going concern it would then shortly present the following balance sheet.

Assets		Liabilities	
Cash	$120,000	Capital stock	$100,000
Loans	600,000	Surplus	20,000
		Deposits	576,000
		Interest and discount collected	24,000

The ratio of cash to deposits is still 20.8 per cent. The ratio of assets to deposits, and hence the chance of ultimate liquidation, is $600,000 (loans)+$120,000 (cash)—a total of $720,000—to $576,000 (deposits), or 720:576=5:4, the same as before the surplus was created. Resources have increased, it is true, but since deposit liabilities increased at the same rate the chances of the creditors being paid in full are no whit different from what they were without a surplus.

In fact, the depositors have a smaller chance of being paid in full than was the case before the surplus was created, for the reason that our banking laws provide that shareholders are doubly liable on capital stock, but not on account of surplus. When measuring the ultimate security of creditors this factor must be included. Correcting the foregoing ratios of assets to creditor liabilities by including the double liability of shareholders on capital stock we have, before the creation of a surplus, $500,000 loans+$100,000 (cash)+$100,000 (double liability on capital stock)=$700,000—to $480,000=35:24 or 1.458 to 1. In the second case it becomes $600,000 (loans)+$120,000 (cash)+$100,000 (double liability on capital stock)=$820,000—to $576,000=205:146, or 1.404 to 1—less than when there was no surplus account at all. It may be concluded therefore that rather than strengthening the position of the depositor the creation of a surplus really tends to weaken it.

In practice banks usually create surplus accounts far in excess of that required by law. The latest report of the comptroller shows the surplus of all national banks to be equal to seventy per cent of the capital stock; while in many banks it is much greater than the capital. The surplus and undivided profits accounts

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together are almost exactly equal to capital stock, for national banks as a group. There appear to be various reasons for this setting aside of "surplus funds" rather than making additions to the capital account: The purchase of government bonds is required in proportion to capital, but not to surplus; the surplus is usually not taxed as is the capital; the creation of a surplus does not necessitate the issuing of additional shares of stock in conformity with legal requirements; and, finally, the owners of the bank are not doubly liable on surplus. It would be interesting to know to what extent this last consideration has been a potent reason for large surpluses.

III

Let us turn now to a consideration of Mr. Willis' statement of the purpose of creating a bank surplus, for it appears to set forth a somewhat different conception of the surplus than any we have been thus far considering.

> Had the bank possessed no surplus the capital would have been impaired to the extent of $15,000 [the amount stolen by the cashier][1] and the result would have been a necessary reorganization for the purpose of reducing the face value of its capital stock to an amount corresponding to the reduced net assets . . . . or else a call upon the stockholders to make good $15,000 in pro rata contributions in order to restore the capital to its face amount.

What Mr. Willis has in mind in this ambiguous statement[2] is doubtless the legal requirement in regard to a bank's capital. If the capital stock (par value) is $100,000 there must be at least $100,000 of assets, or the capital is legally impaired. If a bank starting with $100,000 capital stock should suffer an immediate loss of $15,000 of assets, it would legally be required to call for $15,000 additional cash from the shareholders or else reduce the capital stock to $85,000 by calling in some of the shares.[3] But if it has $20,000 surplus the total assets are still in excess of the capital stock, and therefore no reorganization is necessary. This,

[1] See quotation in full on p. 1004.

[2] My students have been unanimously confused by the statement, most of them getting the idea that the surplus is a sort of additional cash reserve.

[3] Willis does not mean "reducing the face value of its capital stock"; he means reducing the number of shares.

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however, does not mean that the real assets have not been impaired, for it is merely a legal fiction that puts the surplus down as something other than capital. The strength of the bank has been lessened by $15,000 in either case. And it should be noted in passing that all this has no bearing whatever upon the security afforded the depositors; the real security is reduced as much in one case as in the other.

The creation of a surplus immediately upon starting a bank is sometimes regarded as important in affording a convenient accounting device whereby liabilities may be reduced proportionally with declining assets without tampering with the amount entered as *capital*.[1] This would obviously be important quite apart from the legal requirement discussed in the preceding paragraph. We have come generally to regard the capital account as inviolable, as standing for a permanent guaranty fund put up by the shareholders. Popular fear or distrust would therefore be aroused by a reduction of the capital account. The surplus may consequently be regarded as a useful accounting buffer whereby the net worth may be marked down without affecting the capital. This has an important psychological advantage; for, to many people, surplus marked down from $20,000 to $5,000 appears less serious than capital reduced from $100,000 to $85,000.

In the two preceding paragraphs we have been considering the advantages of an *initial* surplus in the banking business. It is, however, in connection with the surplus accumulated from earnings that the main problem exists. We find in practice that such a surplus possesses virtually no advantage as an accounting device, for banks have come to guard against a reduction of the surplus almost, if not quite, as jealously as against reducing the capital account. While the surplus can be reduced without reorganization, it is nevertheless such bad advertising to show a reduced surplus that its reduction is regarded as a last resort measure. The surplus, an increasing surplus, due to the belief that it represents both a profitable business and an increasing security for depositors, as

[1] We could of course write down the amount entered as capital, if losses were sustained, without any calling in of stock, if we should adopt in banking the policy of issuing stock without a par value.

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already indicated, is one of the strongest advertising points that a bank can possess. To guard against an unfortunate "impairment of the surplus" banks usually carry a sort of secondary surplus account known as undivided profits.

It is this undivided profits item that most commonly serves as the accounting buffer. If there are losses in assets the undivided profits account is reduced instead of the surplus. Moreover, it is the common practice nowadays to carry very large undivided profits accounts, large enough to cover almost any loss without reducing the account to zero. The latest returns of the national banks to the comptroller show: capital, $1,073,875,000; surplus, $754,621,000; undivided profits, $317,412,000.[1] That this is no new development may be seen from the figures for thirty years ago: capital, $578,-462,765; surplus, $173,913,440; undivided profits, $71,451,167.[2] This undivided profits account is not, as many suppose, an account which disappears at each dividend date, a part going to shareholders as dividends, and the remainder to surplus. It is the profit and loss account that is thus periodically eliminated. The undivided profits account has come to serve as the buffer against the "impairment of surplus."

For the extraordinary losses with which banks occasionally meet, a writing down of the surplus may be avoided even though the bank does not possess an undivided profits account equal to the amount of the loss. The loss may be carried as a negative profit and loss account, though this has obvious disadvantages; it may be carried as *deficiency;* or it may be cared for by writing up assets that have been carried below market value. A few years ago the First National Bank of New York sustained losses, by defalcation, of $690,000. Neither undivided profits nor surplus was reduced, the officers stating that the bank possessed a "secret reserve" sufficient to cover the loss. It appears that they wrote up the value of the real estate which had been carried at original cost—a figure substantially below the then actual market value.[3]

I mention these alternatives not as being better than an undivided profits account adequate to cover any losses that might

[1] Date of March 5, 1917. [2] Date of October 31, 1887.

[3] See Walton, *Advanced Accounting*, chap. xix.

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in reason be incurred, but merely to show that the undivided profits item is not indispensable even as an accounting buffer.

It is interesting to note, also, that undivided profits has come quite generally to be regarded, like the surplus, as added security for the depositor. The two items are often entered together in bank statements as surplus and undivided profits. There is good advertising power in an undivided profits account as well as in a surplus; for the typical depositor regards it as additional net resources, if not, indeed, as cash in the vaults. It will be apparent without argument, however, that an undivided profits account does not increase the strength of the bank any more than does a surplus. The analysis here would obviously be identical with that already given for the surplus.

IV

If, then, the accumulation of "surplus funds" results in decreasing rather than increasing the security of the bank's creditors, should not something be done about it? Cannot a different use of these funds be required which will not result in a *pro tanto* increase of liabilities? Investment in bonds suggests itself as a possible alternative.

At first thought it would appear that an investment of $20,000 (representing surplus) in bonds would indeed increase the assets and add to the security of the depositor. Returning to the sample statement on page 1007 we should have:

Assets		Liabilities	
Cash	$100,000	Capital stock	$100,000
Bonds	20,000	Surplus	20,000
Loans	500,000	Deposits	480,000
		Interest and discounts collected	20,000

In this statement we have assumed that the purchase of $20,000 of bonds was made with actual cash. Now in such an event the ratio of assets to deposits would unquestionably be increased. But, in fact, would the purchase generally be made with specie? No; the corporation or individual that sells bonds to a bank would almost always take a checking account on this bank and check the amount out at pleasure, just as in the case of a loan secured by com-

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mercial paper or collateral. It follows, of course, from this that the investment of a bank's surplus in bonds results in a proportional increase of deposits in this or other banks, and that the net result is the same as when these funds were used in the making of ordinary commercial loans. The ratio of assets to deposits is not altered, at least so far as the banking system as a whole is concerned.

If, rather than taking a checking account with the bank to which the bonds are sold, the seller receives payment by a draft on another bank, the situation as a whole is in no way changed. This bank merely reduces thereby its credits in some other bank and when the seller of the bonds places the draft to his credit in some bank this increases deposits for the system as a whole, just as before. In short, so long as credit instruments are the means of payment, deposit liabilities are increased somewhere in the banking system to an amount substantially equal to the increase of bonds on the assets side; and hence the surplus does not strengthen the position of depositors.

V

I should not like to be understood from the foregoing as arguing for the abolition of the practice of setting aside surplus and undivided profits. I do wish to be understood, however, as challenging the whole theory on which the legal requirement for and the practical accumulating of a surplus is based; and to urge that we no longer deceive ourselves with the notion that the surplus is an added protection to depositors.

From a quite different standpoint, however, the accumulation of a surplus by banks has possessed undoubted advantages. It has necessarily meant a constantly increasing size of banking institution. The requirement of the national banking law with reference to accumulating a surplus, coupled with the policy of the bank management in going far beyond the requirements of the law, has resulted in many cases in preventing the multiplication of small banks. A large number of small banks obviously means a great increase in the cost of conducting the banking business, owing to the great duplication of overhead expense; and it goes without saying that these extra costs must be passed on to the public in the form of higher rates.

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Large banks also afford better protection to their creditors than small ones through the wider distribution of risks which they secure. The larger the number of borrowers and the more widely distributed the loans, the less the probability of heavy proportional losses. I am merely enunciating here the well-known principle of self-insurance. From this standpoint a bank may well argue that the growth of a surplus is some evidence of a sound institution.

In this connection it should be observed, however, that these advantages would all be secured quite as well by requiring constantly increasing capital as by requiring the accumulation of a surplus; and at the same time the double liability of shareholders on the additional capital would prevent the lessening of the ratio of total assets to total deposits. If we are to preserve the original ratio of assets to deposits with growing banks the growth must either be made through additional stock issues or else by requiring that the stockholders should assume a double liability on surplus as well as on capital stock.

It must be admitted also that the accumulation of a surplus from earnings over a period of years does usually indicate, as the banker contends, generally sound and successful management. It is only in the contention that the surplus, in itself, affords increased security to depositors that current bank advertising is misleading.

Finally, I should not like to be understood as being fearful of the solvency of our banks, or of arguing for legislation which would require banks to assume a double liability on account of surplus. Undoubtedly we can go on in the future without changing our legal requirements as to surplus and have no greater percentage of failures than we have had in the past. The character of the assets of the great mass of our banking institutions is clearly such as to give ample protection to bank depositors, even though the surplus affords no additional protection. The present discussion has, therefore, no practical purpose. "Truth for truth's sake" is its only justification.

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EXTENT OF PROFIT-SHARING IN THE UNITED STATES; ITS BEARING ON INDUSTRIAL UNREST

The intensity of the industrial unrest of the last decade brought in its train numerous analyses of its principal causes. Among these the matter of the relatively low incomes of the working classes seems to rank first and foremost. To augment the workers' earnings without seriously disturbing the regular run of trade and industry has become the desideratum of students of labor questions, statesmen, philanthropists, and employers. In the opinion of a considerable number of such public-spirited citizens profit-sharing furnishes one of the least costly and most effective methods of achieving the desired result.

A question as to the meaning of profit-sharing immediately arises. The term profit-sharing has been extended in popular usage to include numerous gain-sharing or bonus schemes the essential character of which places them outside of a correct interpretation of the term. Many of the schemes known as profit-sharing systems, although providing some supplementary remuneration to the regular earnings of the beneficiaries, do not bear any direct relation to the actual earnings of the enterprise and cannot, therefore, be classified as involving the principle of profit-sharing in the proper sense of the term. As a matter of fact, very few of the methods adopted by American employers for the purpose of augmenting the ordinary earnings of their employees can properly be called profit-sharing as defined by the International Co-operative Congresses.[1]

[1] The term "profit-sharing," strictly speaking, was defined by the International Co-operative Congress, held in Paris, France, 1889, as "an agreement freely entered into, by which the employees receive a share, fixed in advance, of the profits." The same congress defined the term "agreement" as covering, "not only agreements binding in law, but as including also cases where the agreement is only a moral obligation, provided it is honorably carried out." The term "profit" is to mean "the actual net balance or gain realized by the operations of the undertaking." A "share" is stated to be "a sum paid to the employee out of the profits," such share to be "dependent upon the amount of the profits." The share given to the employee "shall not be indeterminate," that is, "it must not be a share which an employer fixes, at the end of some period, at his absolute discretion, as distinguished from a prearranged basis."

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Before proceeding any farther it is necessary to define exactly what in the following article is meant by the term. The understanding of the writer is that profit-sharing, in order to be genuine, must contain the following elements: (1) aggregates to be distributed to the participants, or individual shares, are to depend principally upon the earnings of the business; (2) the proportion of the earnings to be distributed is to be definitely determined in advance; (3) benefits of the scheme are to extend to at least one-third of the ordinary wage- or salary-earning employees. The formulated definition, although less rigid than that of the Co-operative Congresses, excludes from the category of profit-sharing all schemes under which bonuses based upon individual efficiency are paid, usually associated with the various phases of scientific management. It further eliminates from consideration actual profit-sharing schemes the benefits of which are limited to a selected few of the better-paid executive or supervisory employees.

Different reformers, some students of industrial problems, as well as employers, have frequently addressed themselves to a consideration of profit-sharing with enthusiasm and hope. Profit-sharing, in the opinion of President Emeritus Eliot, of Harvard, may furnish one of the principal means for a satisfactory solution of the industrial strife of our present day.[1] The effectiveness of such schemes in minimizing class conflicts, however, has never been appraised. Following the publication of the latest edition of Gilman's *Profit-Sharing between Employer and Employee* in 1896, no comprehensive survey of the extent of genuine profit-sharing in the United States was made until recently. Such a survey now appears in one of the publications of the United States Bureau of Labor Statistics.[2]

The precise nature of this report may be inferred from the

The relative proportion of the total working force of a concern that must share in the profits in order to establish real profit-sharing conditions was stated to be "not less than 75 per cent." (*Bulletin de la participation aux benefices* [Paris, Tome XIX, 1897], pp. 220–22, cited by D. F. Schloss, *Methods of Industrial Remuneration* [London, 1898], chap. xvii.)

[1] Charles W. Eliot, "Profit-Sharing," in *Profit-Sharing and Scientific Management* (four addresses. Boston: Efficiency Society of New England, 1914), pp. 3–9; also "The Road to Industrial Peace," *The Nation's Business* (August, 1917), p. 16.

[2] Bulletin 208, *Profit-Sharing in the United States.*

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fact that in the course of its preparation all profit-sharing plants known to have been in existence were visited for the purpose of examining carefully the nature of the schemes in operation, their objects, and the results achieved. This study reveals the fact that there are at the present time in operation in the United States sixty genuine profit-sharing plans. The number of employees employed under profit-sharing agreements does not exceed thirty thousand—an insignificantly small group when compared with the total wage-earning population of the country.

The existing profit-sharing plans are of comparatively recent origin, only seven of them—or about one-ninth—having been established prior to 1900. Twenty-nine—or almost one-half—have been established since 1911. Over two-thirds have been in operation less than ten years. Of the latter group, twenty-one, or about one-third of all, were put into effect in 1914, 1915, and 1916.[1] Over six-tenths of the profit-sharing establishments are located in three states—Massachusetts, New York, and Ohio—and more than one-half of them are in the North Atlantic section of the country.[2] The size of the twenty-eight profit-sharing establishments as indicated by the average number employed during a representative period reveals the fact that more than seven-tenths of those reporting employed less than 300 people and that only slightly over 10 per cent employed one thousand or more.[3] Of the thirty-seven establishments reporting the proportion of the total employed who participated in the distributed profits, nineteen, or 51.4 per cent, reported 80 per cent and over participating; thirteen, or 35.1 per cent, reported 60 to 80 per cent participating; four, or 10.8 per cent, reported 40 to 60 per cent participating; and only one reported 20 to 40 per cent of all the employees sharing in the profits.[4]

In nine-tenths of the plans the principal prerequisite for participation is the permanency of affiliation with the employing company, as shown by a specific length of continuous service. The minimum of continuous service required varies from three months to three years, the length of time specified in more than one-half of all the plans being one year or less. Thus practically all the

[1] Bulletin 208, p. 17. [2] *Ibid.*, p. 18. [3] *Ibid.* [4] *Ibid.*, p. 19.

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plans exclude from participation the so-called shifting part of their working organization, confining the benefits to their more or less permanent employees. In about one-eighth of the plans in operation employees, in order to participate, are required to file a written application especially provided for that purpose. Such applications are usually perfunctory statements signed by the employees to the effect that they promise to do faithful work and be loyal to the company. In one instance employees obligate themselves contractually to share in the possible losses of the year's business in proportion to their earnings, but not to exceed 10 per cent. Under this plan 10 per cent of the weekly earnings of each of the participating employees is retained by the company until the end of the distribution period, when the amounts thus retained are returned to the employees together with their share of profits for the year. In the great majority of the plans studied the basis for computing individual shares is relatively simple—namely, the amount of earnings of the participants. The individual shares in such instances are determined by dividing the employees' part in the divisible fund by the aggregate of wages of the participants in order to obtain what is usually called the profit-sharing dividend and then multiplying this dividend by the respective earnings of each of the participants.

In all of the plans except one, discharge and leaving employment act automatically as causes for forfeiting the share of profits for the current year. Under one plan, only a discharge for cause results in forfeiture; other discharges, being more in the nature of permanent lay-offs on account of lack of work, do not deprive employees of their proportionate share of the profits. Some of the plans under which shares of profits are paid in stock or in the form of savings accounts penalize those leaving employment more severely than those who are discharged, it being specified in these instances that those leaving forfeit some part of the share of the profits of the previous year—usually from one-fifth to one-third—in addition to the share of the current year's profit. The provision that death shall be a cause of forfeiture occurs only in about one-half of the plans; in the other plans it is specified that the pro rata share of the deceased employee shall be paid to his family or dependents.

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In profit-sharing plans under which the shares of profits constitute some proportion of the dividends paid on capital the amounts of forfeited shares are usually retained by the employer. In other plans the amounts forfeited do not revert to the employer, but are apportioned instead among the participating employees.

The majority of plans in operation specifically provide that employees temporarily laid off but otherwise eligible to participate and ready to return to work upon call be not barred from participation. Their shares in such instances are based on their actual earnings. In one-third of the plans cases of lay-off are treated "each upon its own merits." The same treatment as that of employees laid off is accorded to those taken sick, provided the sickness does not extend "over an unreasonably long period"—usually not over six months. Under one plan only is it specifically stated that sickness of an employee carries with it a forfeiture of his share of the profits. In this instance, however, the company maintains a special fund for the benefit of its sick employees.

Under thirty-two plans or more than three-fourths of those reporting, the shares in profits were paid fully in cash. Five reported as paying in "part stock or savings account or common fund and part cash." Of these the following proportions were paid in cash: one, 99 per cent; one, 90 per cent; one, 85 per cent; one, 80 per cent; and one, 10 per cent. Under two plans the shares of profits were credited to a common fund, which was utilized for the accumulation of a pension reserve which was to be made up in equal parts of the shares of profits and contributions by the employees.

The benefits accruing to the participating employees as a result of the operation of the profit-sharing plans during one representative distribution period, in terms of a percentage of the regular earnings of participants, are shown in the table on page 1024.

Under almost one-third of the plans the profit-sharing dividend on the regular earnings of the participants was less than 6 per cent. Slightly over one-third of the establishments paid dividends varying from 6 to 10 per cent. The remaining third of the

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establishments paid dividends of 10 per cent or more. Of the latter, five establishments paid profit-sharing dividends of 20 per cent or more.[1]

PERCENTAGE OF REGULAR EARNINGS RECEIVED AS SHARE OF PROFITS IN THIRTY-FOUR PROFIT-SHARING ESTABLISHMENTS

Classified Percentage of Earnings Received as Share of Profits	Number of Establishments
Under 2	1
2 and under 4	6
4 and under 6	4
6 and under 8	7
8 and under 10	5
10 and under 15	5
15 and under 20	1
20 and under 30	1
30 and under 40	2
40 and under 50	1
50 and over	1
Total	34

Three main reasons may be presented as accounting for the relatively low profit-sharing dividends paid under the plans. They are: (1) the small proportions of their net profits that employers are ready to share; (2) the rather large numbers of beneficiaries; and (3) the method used in some of the plans in determining the relative interests of employer and employees in the divisible fund. The last-mentioned reason is the least apparent and needs a brief explanation. In the plans under which the method of distribution explains the low profit-sharing dividends it is usually provided that net profits set aside for distribution are to be apportioned between employer and employees "in proportion to their respective interests." The employer, who is invariably the formulator of the scheme, usually assumes that his interest in the divisible fund is represented by the amount of his capital, while that of the employees can best be measured by the labor pay-roll. Aside from the fact that this assumption is unsound—the earning power of capital rather than

[1] Bulletin 208, p. 19.

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its amount being more analogous, if at all comparable, to the labor pay-roll—this method of determination of relative interests results in a distribution of the fund in a ratio of at least three to one in favor of capital, for the reason that the annual cost of labor seldom exceeds one-fourth of the amount of capital invested. That the method of determining the relative interests of the participants is largely responsible for the low dividends paid may more clearly be seen from the fact that the only profit-sharing establishment in the United States—moderately successful—that has been paying considerable profit-sharing dividends (an average of 85 per cent for the period 1907–16) based its relative-interest theory upon the earning power of capital instead of its amount. As a result of this, distributions were made at the ratio of about three to one in favor of labor. A computation based upon actual figures shows that had the usually prevailing notion of relative interests been applied in this establishment the distribution ratio would have been quite different, viz., five to one, and in favor of capital.[1]

From a study based upon the facts and figures found in the recent report of the Federal Bureau of Labor Statistics, supplemented by personal observations, the following conclusions may be drawn:

1. Almost seven-tenths of the profit-sharing plans examined by the mentioned report of the Bureau of Labor Statistics yielded to the beneficiaries an annual augmentation of their earnings of less than 10 per cent. Therefore, if labor difficulties are to be solved through considerable augmentations of the incomes of the employees, profit-sharing, as it stands at the present time, will not do it. No one at all familiar with the nature of the present-day wage conflicts can possibly venture the opinion that even an all-around wage increase of 10 per cent will contribute materially toward the establishment of industrial peace and the creation of a general harmony of interests.

2. If, again, industrial peace is to be brought about by a better understanding between employer and employees and the development of mutual confidence based upon some degree of democratization of industry, profit-sharing, in its present form at least, can

[1] *Ibid.*, pp. 37–44.

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hardly render any appreciable assistance. The profit-sharing employer is just as keen about his traditional prerogatives to hire and fire and to run his business regardless of the opinion of his employees as his non-profit-sharing confrères. Trade unionism and collective bargaining are no more popular in profit-sharing establishments than elsewhere. In fact, no profit-sharing firm is known to have in operation any system of collective bargaining or of definitely established friendly relations with trade unions. In this connection it may be of interest to observe that one of the oldest, most widely known, and successful profit-sharing employers specifically excludes from the benefits of his scheme certain groups of his employees who through unionization have raised their rates of wages "to an unusually high point," on the theory (taught him by experience) that "good union men are, as a rule, poor co-operators." On the contrary, instead of evoking good will, profit-sharing, on account of its arbitrary character under which employers unconditionally reserve to themselves the privilege to discontinue or modify the entire arrangement, is a rather potent breeder of suspicion and distrust.

Although substantially agreeing that their plans have greatly improved their relations with the employees and contributed considerably to the stabilization of their working force, profit-sharing employers disagree greatly as to the results achieved with reference to increasing the individual or collective efficiency of the participating employees. Only three out of sixty stated definitely that increased efficiency has resulted; and these have paid unusually high profit-sharing dividends to their employees in the past. Aside from profit-sharing employers, neither employees nor employers have any confidence in profit-sharing. As far as the former can give expression to their opinions, they have put themselves on record as opposed to it.[1] This attitude of employees toward such schemes is usually explained by the fact that, in the opinion of their leaders, profit-sharing plans have an inevitable tendency to hinder the development of trade unionism and collective bargaining.

[1] For opinions of representative labor men see *Profit-Sharing by American Employers* (report issued in 1916 by the Welfare Department of the National Civic Federation), pp. 233–43.

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Labor leaders are of the opinion that these schemes make increased earnings uncertain, contingent wholly upon employers' profits and payable only "at their own sweet will." An informant belonging to a labor organization explained his opposition to profit-sharing on the ground that "there is no sense in playing a game the rules and regulations of which are formed without the consent of one of the principal parties concerned, such rules, furthermore, being subject to change at any time without common consent." Workmen, he said, prefer unqualified increases in wages to a problematical share in the employers' enterprises in the management of which they do not partake. Employees, furthermore, have no faith in profit-sharing, because under only one of the plans in existence are they granted the privilege of inspecting the books of the employer in order to convince themselves that the full share due them has been distributed. Suspicion is further augmented because under a majority of the plans the prospective beneficiaries are not even given an inkling as to the specific proportion of the profits that their employers are willing to share. What is there then, employees repeatedly say, to prevent an unscrupulous employer from juggling his profit-and-loss account in order to avoid the payment of the promised benefits?

The attitude of profit-sharing employees toward such schemes is interesting and instructive. As a rule, this attitude varies with the nature of the position held by the informant and with his general views on industrial questions. In all, three distinct attitudes were observed, to wit, complete approval, absolute condemnation, and a general indifference which took profit-sharing as a matter of course. Profit-sharing employees who hold well-paid supervisory or executive positions were definitely in favor of the plans. To this small group of participants the scheme appeared to be an actual realization of a state of community of interest between employer and employee. Among the bulk of the ordinary wage-earners two distinct opinions prevailed. If the informant happened to be a member of a trade union or was an ardent believer in organized labor and collective bargaining, his opinion on profit-sharing was analogous to those of the labor representatives cited above—viz., absolute disapproval of the scheme irrespective of the benefits that

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might accrue to the participants. To informants of this group the profit-sharing plan was a carefully planned attempt on the part of the employer to stimulate production, forestalling at the same time the possibility of collective demands for higher wages and better conditions of employment. The proportion of participating employees that expressed this opinion was not very large, and constituted, perhaps, not more than one-fifth of those interviewed. The attitude of the great majority of the participating employees was one of general indifference. Profit distributions were taken as a matter of course, were expected, and were relied upon in the balancing of their income and expenditure accounts. The employers' motives were not questioned as long as distributions continued at regular intervals. If, however, the shares paid grew less or their distribution irregular, suspicion was engendered and dissatisfaction with the scheme aroused.

The profit-sharing field is rather unique in the sense that under its arrangements additional duties carry with them no new rights. Under most of such schemes the employees are constantly reminded of the fact that they are no longer mere employees, that they are partners in the business and are therefore expected to conduct themselves as such—to avoid any moves or acts, such as requests for better conditions and higher wages, that will inconvenience the business. These new duties, however, involve no established rights to benefits, for each of the schemes specifically reserves to the employer the right to (1) determine which of the employed shall participate, and under what conditions they may do so, (2) to hire and fire at pleasure, and (3) to discontinue or modify the entire arrangement without notice or consent of the employees.[1] Legally, shares in profits thus become mere gratuities which the employer may or may not dispense.[2]

[1] Commenting upon a certain pension scheme under which the annuity allowances to be granted are expressly described as not a "right" of employees, *Babson's Confidential Labor Bulletin*, L-83, August, 1917, says: "We do not believe, though, that a plan of this kind meets the demands of labor in these days or is quite in tune with the spirit of the age. If we are not mistaken, there is a growing demand among workers for a recognition of rights over and above wages. Clients should not expect a plan of this kind to exercise any influence on radical employees."

[2] For a detailed discussion of the legal status of profit-sharing, see Bulletin 208, p. 6.

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That profit-sharing is not popular with employers may easily be inferred from the little headway that such wage schemes have made in the United States as well as from the very small number of employees working under profit-sharing conditions. Employers have but little faith in profit-sharing because they cannot see how distributions made upon any other basis than that of individual efficiency can possibly contribute to the augmentation of their profits.[1] Considered as a direct stimulus to efficiency, real profit-sharing cannot possibly succeed, because, under it, individual shares are to bear no direct relation to anything but the earnings of the business. Again, some employers feel that from a strictly equitable viewpoint employees admitted to participation in the profits are morally bound to be willing to share in the possible losses of the business. Unfortunately, aside from the fact that ordinary workers do not earn enough to maintain a satisfactory standard of living[2]—much less to assist employers in meeting business losses—one may appropriately doubt the wisdom or even the desirability of asking anyone to share in the losses of an enterprise the management of which was to him a sort of *terra incognita*—a sphere absolutely outside of his legitimate jurisdiction, or even inquiry.[3]

The degree of effectiveness of these schemes depends directly upon the amount of benefits accruing to the participants. These benefits have been rather small, equivalent in many instances to less than what ordinarily grateful employers in thousands of establishments are in the habit of distributing as Christmas gifts in the form of cash bonuses, "gold pieces," and turkeys. Profit-sharing does not even succeed in evoking any of the stimuli to efficiency that Christmas gifts usually do—perfunctory "thank you" and some additional good will to last until after New Year's Day. On the contrary, no matter how large or small the amounts distributed may be, the one-sidedness of the arrangement and its absolute

[1] The desire for increased profits, and not philanthropy, was responsible for the origin of most of these schemes. *Ibid.*, p. 170.

[2] Cf. *Conditions of Labor in American Industries*, by W. Jett Lauck and Edgar Sydenstricker (New York, 1917), pp. 357–63.

[3] The same argument could, of course, be advanced against participation in the profits by employees who do not directly assist in the management of the business.

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control by the employer make the participants feel suspicious lest they do not get all they should. For entirely different reasons this feeling of dissatisfaction and lack of confidence in the value of the scheme appears also in the mind of the employer. Somehow or other he cannot help feeling that from the point of view of greater profits more satisfactory results could be obtained with less pretense and annoyance, through improvements in working conditions and increases in wages based upon the payment of bonuses for individual efficiency.

What then is, after all, the *raison d'être* of the existing profit-sharing schemes, few though they may be? To this question the following answers may be suggested:

1. The advertising value of the schemes, the very name of which is high-sounding and appeals to the popular mind. The advertising value of profit-sharing, it was said, was particularly great in mercantile establishments which cater to the trade of working people, such as grocery and department stores and mercantile institutions selling their goods on the instalment plan. Managers of two such establishments were certain of the beneficial value of their profit-sharing plan in this respect.

2. The nature of some business organizations under which it is difficult to correlate directly individual efficiency with its corresponding reward. The value of this factor to the employer was clearly brought out by the vice-president of the Executives' Club of Detroit in an article entitled, "Where Profit-Sharing Fails and Where It Succeeds." The author says: "Considered merely as a stimulus to increased production and greater net gain, profit-sharing is of particular value in plants where (1) individual efficiency cannot yet be exactly measured, or where (2) much work is done far away from supervision, or where (3) longevity of service is necessary to preserve the quality of the product or to guard trade secrets, or where (4) a supplement to the wage system promoting individual efficiency is needed to minimize plant waste."[1]

3. The effect of the schemes upon the labor turnover. Profit-sharing, particularly in the establishments in which the business is prospering and in which distributions are made at regular

[1] *System Magazine*, March, 1916.

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intervals, does seem to have a beneficial influence upon the stability of the organization. One profit-sharing employer, who made a very careful study of the effect of his plan, describes this effect as follows: "It [profit-sharing] works precisely like an increase in wages, but is more valuable because the employee, in order to receive his share, has to wait till the end of the distribution period, a fact that makes him hesitate before quitting, which would naturally involve the forfeiting of his share in the profits."

4. The momentum of some of the older plans which makes profit-sharing a sort of a tradition which is difficult to abandon.

5. The sense of social justice of some employers. To this factor is due the existence of three profit-sharing schemes the principal object of which was stated to be "an equitable distribution of the profits of the undertaking, as a matter of justice, irrespective altogether of hopes for increased efficiency."

6. The belief of some employers that profit-sharing will develop good will, diminish industrial strife, and stimulate efficiency, obviating at the same time, perhaps, the necessity of granting increases in wages.

An examination of the causes specified by employers as having been responsible for the abandonment of profit-sharing plans that they are known to have had in operation reveals the interesting fact that many of the plans were discontinued because the new order of things failed to appeal to the prospective beneficiaries, who preferred the certainty of ordinary increases in wages to the uncertainty of the potential profits at the end of the distribution period.[1] Demands on the part of the new partners for increased wages usually appeared unreasonable and unfair to the employer, who quickly decided to abandon the scheme. One student of this question has summarized the nature of profit-sharing in its bearing upon this conflict of opinion as follows:

> It is obvious that if profit-sharing is based upon favor, the so-called divisions of profits are nothing more nor less than Christmas presents or other periodical gifts, and therefore cannot be considered as a serious economic factor.
>
> If profit-sharing is predicated upon the mutual rights and obligations arising out of relation of employer and employee, or if it is based upon some equitable

[1] Bulletin 208, p. 166.

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right or obligation flowing out of that relation, it is then permitted to ask at what point in that relation, or under what circumstances, does the right to demand an increased wage cease and the right to demand a share of profits begin?

Unless there is some method of general application by which that point may be established, it comes down to this, that the employer—and he alone—can say when, to what extent, and under what circumstances the employee shall be permitted to exercise his supposed right—an arrangement which not only makes the employer the umpire, but permits him to change the rules in the middle of the game.[1]

One cannot help but feel that the illogical character of profit-sharing, as outlined briefly in this article as well as by the authors quoted, presents one of the reasons why genuine profit-sharing plays such a negligible rôle in the wage systems of advanced industrial countries. The effectiveness of any economic arrangement does not necessarily depend, of course, upon its power to appeal to logicians or jurists. Profit-sharing has failed to become of any consequence among the other wage systems for the simple reason that it has failed to appeal to the instinct of economic self-interest of capital and labor, and because its tendency to increase efficiency and profits, on the one hand, or appreciably to augment the earnings of the employees, on the other, has been very limited.

Earnest advocates of profit-sharing may take exception to these conclusions. They may state that the failure of profit-sharing to make any appreciable headway among other wage-payment systems is due to the fact that it is being operated under unfavorable conditions. President Eliot may rightly emphasize the point that the elements or "adjuncts" which he considers as essential to the success of profit-sharing, such as large distributions, welfare-work, pensions, sale of stock to employees at reduced rates, and "co-operative management,"[2] are seldom found in conjunction with the existing profit-sharing plans. This is substantially correct. The report of the Federal Bureau of Labor Statistics referred to above shows that almost three-fourths of the

[1] *Profit-Sharing by American Employers* (report issued by Welfare Department of the National Civic Federation), pp. 258–59, article by Francis X. Butler.

[2] "The Road to Industrial Peace," by Dr. Charles W. Eliot, *The Nation's Business*, August, 1917, p. 16.

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plans distributed shares equivalent to less than 10 per cent of the ordinary earnings of the beneficiaries—that is, amounts not sufficiently large in the opinion of President Eliot[1] to affect the efficiency and develop a sense of partnership on the part of the employees. Although many of these establishments are known to be engaged in some sort of welfare-work, few of them are large enough and financially stable enough to instal, and maintain pension funds. Many of the profit-sharing firms are small and have no marketable stock to sell to their employees. And, as brought out in the preceding pages, very few profit-sharing employers manifest any great interest in what President Eliot terms co-operative management. The absence of some of the factors thought of as essential to the success of profit-sharing raises the question as to the reasons for this absence. And, as far as one may judge correctly from the opinions of numerous employers, the answer to this question is: Genuine profit-sharing—that is, profit-sharing not related directly to individual efficiency—does not pay.

BORIS EMMET

WASHINGTON, D.C.

[1] *Ibid.*

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INTERSTATE MIGRATION OF NEGRO POPULATION

For a clear understanding of the northern migration of Negroes in the years 1916 and 1917, a knowledge of the general movement of the Negro population since 1865 will prove very useful. Several recent writers have been prone to emphasize the development in the Negro within the past two years of "a sudden desire to move," but a little investigation soon reveals the fact that the black man, ever since the day of his emancipation, has shown a tendency to migrate.

At the close of the Civil War, when told that he was free, the Negro at once began to put his freedom to the test; and as the most palpable evidence of his liberty was his ability to come and go as he chose, it was only natural that he should begin to move about. At the end of every year thousands of tenants in the southern black belts may still be seen removing to other farms, in many cases without even taking the pains to examine beforehand the lands they are to cultivate or the houses they are to occupy. Such migrations do not appear in the census returns, but their social and economic importance is far-reaching. Dr. Booker T. Washington often found it necessary to urge his people to abandon their moving propensities and to settle down and acquire property. At gatherings of Negro farmers he was fond of narrating a homely story of a chicken which belonged to one of these peripatetic tenants and which, from long-acquired habit, would walk up to its owner's cabin door on every first of January and squat down and offer its legs to be tied, preparatory to its journey to the next farm.

The possibility of the migration of a great number of freedmen from some sections of the South became evident almost as soon as the Civil War was over, and as early as November 27, 1866, Governor James L. Orr, of South Carolina, stated in a message to the legislature that the Negroes were—

> invaluable to the productive resources of the State, and if their labor be lost by removal to other sections, it will convert thousands of acres of productive land into a dreary wilderness. For this reason, I have felt it to be my duty

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to discourage their migration. The short crops of the present year should stimulate the planter and farmer to renewed energy and enterprise. He will, however, find his lands of little value if he cannot command labor to cultivate them. If the Negro remain here, his labor must be made sufficiently remunerative to subsist and clothe him comfortably. Schools must be established to educate his children, and churches built for his moral training.[1]

This threatened migration, to which Governor Orr referred, was a westward movement, from South Carolina, Georgia, Alabama, and Mississippi to Louisiana, Arkansas, and Texas. It differed materially from the later migration to the North. In general, the westward movement in our country is actuated by causes similar to those that prompt European migration to America. It is a movement from a highly developed, densely populated region, where the economic stress is acute, to a region more sparsely populated, with undeveloped resources, where the struggle for existence is not so keen. This explains the lure of the Southwest for the Negro, as well as that of all the West for the white man. But there is another movement of population that operates in a manner quite the reverse of the principles just enunciated. This is the cityward movement, a migration to a region of denser population, keener competition, and more acute economic stress. Such a movement is the northern exodus of Negroes in 1916–17.

In the late sixties and early seventies the westward migration of Negroes attained considerable headway. It was at first a movement of individuals and soon became one of groups. Railway and land companies carefully fostered it and had their agents in various sections of the South, very much as trans-Atlantic steamship companies have maintained their runners in the remote rural districts of Southern and Eastern Europe to encourage emigration to America. A well-known Negro educator states that in 1874 he heard one of these agents boast that he had induced 35,000 persons in South Carolina and Georgia to leave for Arkansas and Texas.[2] This westward movement, however, was soon dwarfed into insignificance by a threatened migration on an unprecedented scale to

[1] South Carolina *House Journal* (1866), pp. 20–21.

[2] W. H. Crogman, *Talks for the Times* (Atlanta, 1896), p. 54. The agent's statement is probably much exaggerated, but there must have been a considerable migration to have prompted him to make such a claim.

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Kansas from the lower Mississippi Valley early in the spring of 1879. The "Kansas Exodus," as it came to be called from its alleged resemblance to the flight of the Israelites from Egypt, presents several striking analogies to the movement of 1916–17. When the exodus to Kansas began, there was the same suspicion, as noted in 1916, that it was the result of efforts to colonize Negro voters in the North and make certain states safely Republican. In both cases this suspicion was finally allayed. There were also, in 1879 as in 1916, the assumption by a portion of the northern press that the Negro was fleeing north to escape ill treatment, and the tendency on its part to lecture the South for its shortcomings in dealing with the black man. One may also note, in both instances, the same sort of uneasiness among the planters in those districts from which emigration had been excessive, the same assurance by some that all of the Negroes would eventually return, and the same introspective editorials in southern newspapers, with the candid admission that conditions might be better for the Negro, but with the added assertion that even as things were the South was a better place for him than the North. In both instances also may be observed the final recognition that the causes of the movement were basically economic. Of course, there are certain contrasts as well as parallels in these two movements, but the latter appear to be by far the more significant.

The Kansas movement of 1879 was due in large measure to the agricultural depression in the lower Mississippi Valley, but it was precipitated by the activities of a host of petty Negro leaders who sprang up in all parts of the South during the period of reconstruction. Foremost among these were Benjamin (better known as "Pap") Singleton, of Tennessee, and Henry Adams, of Louisiana. Singleton styled himself the "Moses of the Exodus" and personally supervised the planting of several colonies in Kansas.[1] Adams claimed to have organized a colonization council which attained a membership of 98,000.[2]

The exodus to the "Promised Land" of Kansas began early in March, 1879, and continued until May. The total number of emi-

[1] W. L. Fleming, "'Pap' Singleton: The Moses of the Colored Exodus," *American Journal of Sociology*, XV, 61–82.

[2] *Senate Report*, 693, Part II, Forty-sixth Congress, Second Session.

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grants, most of whom went to Kansas from Louisiana and Mississippi, has been estimated at all the way from 5,000 to 10,000, and many thousands more had planned to move, but were deterred by the misfortunes of those who constituted the vanguard. Leaving their homes when the weather was becoming warm, the early emigrants reached Kansas when spring chanced to be unusually backward and the country was still bleak and desolate. Thinly clad and often without funds, they endured much suffering from want and sickness, and many of them became public charges. Societies were organized expressly to care for the "refugees," as they were called, and large numbers returned to their homes as soon as they were able, giving such dismal reports on their arrival as to dissuade others from following their example. Perhaps a third of the emigrants remained, and many of these eventually attained a fair degree of prosperity.

The movement was ill-advised, and too much based on the Negro's sentimentalism. To him Kansas, pictured as the home of John Brown and the scene of many free-soil victories, seemed to be the ideal home for the black man. But he found on arriving a harsh climate, pioneer conditions, and small farmers who had no need of extra laborers and who were not especially friendly to the Negro. That individuals from among this group of emigrants could surmount such difficulties and attain no small degree of well-being, is to the credit of the race. While the exodus caused much suffering, demoralization, and loss of property among the emigrants, it seems to have had at least one good result. In some instances it is said to have caused an improvement in the condition of the Negroes who remained at home. In communities where there had been considerable emigration there was said to have been a tendency to reduce rents and to offer the remaining tenants more favorable terms in general than had obtained prior to the exodus. Such a result would naturally be expected.

In 1888–89 there was a considerable migration of Negroes from southern Alabama to Arkansas and Texas, as a result of the activities of labor agents.[1] The rapid development of the mining industry of Alabama in the nineties caused a rapid influx of Negroes into the mineral regions around Birmingham, and was the cause of much

[1] *Southern Farmer*, Atlanta, Ga., June, 1889.

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uneasiness among the cotton growers of the black belt. The advent of the boll weevil caused a great migration of colored farmers in 1908–9 from the cotton fields to the cane fields of Louisiana. By 1914 the cotton belt of this state had recovered from the demoralization that followed the advent of the weevil; and the sugar planters, depressed by the prospects of free sugar, were reducing their acreage and employing fewer laborers. A tendency toward a counter-migration then showed itself, and labor agents again were active.[1]

These instances are cited in order to indicate that the northern migration of 1916–17 is no new and strange phenomenon. It differs from earlier movements chiefly in the matter of numbers involved. The European war has simply hastened and intensified a movement that has been under way for half a century. To the truth of this statement the reports of the census bear eloquent witness. In 1860 there were 344,719 Negroes in the North; in 1910 there were 1,078,336, an increase of 212.8 per cent for the fifty-year period. In the South for the same period the rate of increase was 111.1 per cent. In the last half-century, therefore, the relative increase of Negroes in the North has been nearly double that in the South. This shows a decided change from the conditions prevailing before the Civil War. At every census before 1860, except that of 1840, the Negro population of the South showed a greater relative increase than that of the North. Since 1860, however, the situation has been reversed, as is indicated by the following table:

PERCENTAGE OF INCREASE OF NEGRO POPULATION

Decade	North	South	Decade	North	South
1790–1800	24.1	34.0	1850–1860	20.3	22.1
1800–1810	18.7	39.2	1860–1870	[33.3]*	[8.8]*
1810–1820	18.0	29.5	1870–1880	[36.5]*	[34.7]*
1820–1830	29.2	31.6	1880–1890	16.2	13.5
1830–1840	38.9	22.2	1890–1900	25.1	17.2
1840–1850	23.7	26.8	1900–1910	18.3	10.4

*Owing to the great irregularities in the census of 1870, especially as it relates to the Southern states, comparisons of this year with those of 1860 and 1880 are wholly misleading, and in the foregoing table the percentages for these years are bracketed.

[1] New Orleans *Times-Democrat*, March 26, 1914.

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It thus appears that in every decade since the Civil War the Negro population of the North has been growing faster than that of the South. This increase can be accounted for in two ways only: by an excess of births over deaths, and by immigration from other states. The meager vital statistics available indicate that while the death-rate of the Negro in the North is lower than that of the Negro in the South, the birth-rate of the northern Negro is also lower and is just barely sufficient to balance the death-rate. The increase in the colored population of the Northern states appears therefore to be due almost wholly to immigration. The census fully substantiates this assumption. In 1910, 415,533 northern Negroes were southern-born. This is nearly two-fifths of the entire Negro population living in the North. Forty-seven per cent of the Negroes living in New England in 1910 and more than 50 per cent of those in the Middle Atlantic and East North Central divisions[1] were born outside these sections. In four of the former slave states (Maryland, Missouri, Kentucky, and Tennessee) there were actually fewer Negroes in 1910 than in 1900. These, it will be noted, are border states, where "the call of the North" is most likely to be first heard and heeded, and whence migration is easier and cheaper than it is farther south. It is also worthy of note that every one of the former slave states except Arkansas was "whiter" in 1910 than in 1900.[2] Indeed, if we exclude from our reckoning states having a Negro population of less than 2 per cent, the only states in the Union that became perceptibly "blacker" in the last census decade were West Virginia, whose percentage increased from 4.5 to 5.3, and Oklahoma, whose increase was from 7 to 8.3 per cent. The increase in these states, however, is not large enough to give rise to problems like those in some sections of the old South.

It is interesting to note that the New England states, before 1910, were not appreciably affected by the northern migration. In three of these states (Connecticut, Rhode Island, and New

[1] The Middle Atlantic and East North Central divisions comprise the states of New York, New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Michigan, and Wisconsin.

[2] While the percentage of Negro population in Arkansas increased, it was only to the extent of one-tenth of 1 per cent.

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Hampshire) the percentage of Negro population between 1880 and 1910 actually declined, in Maine it remained stationary, and in Vermont and Massachusetts it showed a very slight increase. New Hampshire actually contained fewer Negroes in 1910 than in 1790.

Another very interesting feature of the movement of Negroes in the United States is the fact that, in spite of the northward tendencies just described, the center of Negro population has been shifting steadily southward and westward. Since 1790 the center has changed from southern Virginia to northeastern Alabama. This is due to the fact that the drift of Negro population to the North before 1910 was most pronounced in the border states of Tennessee, Kentucky, Maryland, and Missouri, and that the increase in the states farther south more than offset the losses in these four states.

The Negro shows a tendency, not only to move northward, but also to move about very freely within the South. In fact, the region registering the largest net gain of Negroes in 1910 from this interstate movement was the West South Central division (Arkansas, Louisiana, Oklahoma, and Texas), which showed a gain from this source of 194,658. The Middle Atlantic division came second with a gain of 186,384, and the East North Central third with a gain of 119,649. On the other hand, the South Atlantic states showed a loss of 392,827, and the East South Central states a loss of 200,876 from interstate migration. While the Negroes have shown this marked inclination toward interstate movement, they nevertheless exhibit this tendency in less degree than do the whites. In 1910, 16.6 per cent of the Negroes had moved to some other state than that in which they were born, while the percentage for the whites was 22.4. For the relative extent of intrastate migration by the two races, figures are of course unavailable.

As has already been indicated, the cause of the migration, like that of practically all great movements of peoples, is fundamentally economic. But this simple statement does not tell the whole story. The causes may be grouped as *beckoning* and *driving*, the first group arising from conditions in the North and the second from conditions in the South. Among the beckoning causes in 1916–17 were high

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wages, little or no unemployment, a shorter working day than on the farm, less political and social discrimination than in the South, better educational facilities, and the lure of the city. Among the driving causes were the relatively low wages paid farm labor, an unsatisfactory tenant or crop-sharing system, the boll weevil, the crop failures of 1916, lynching, disfranchisement, segregation, poor schools, and the monotony, isolation, and drudgery of farm life. There is a noticeable tendency on the part of some Negro leaders to attribute the movement chiefly to the unrest due to mob violence and other ills, social and political, that fall to the lot of the black man. When we note, however, that lynching for the past twenty-five years has been slowly but surely decreasing and that disfranchisement is no new thing, but has been an accomplished fact for more than forty years, it becomes evident that, whatever grievances of this nature the Negro may have against the South, he has at least no *new* complaint and therefore no stronger reason for migrating on this account in 1917 than he has had for several decades. If adverse social and political conditions are the main cause of the northern migration, it is asked, why did the Negro not go in the eighties and nineties when lynchings were four times as frequent as they now are and when disfranchisement was effected by "bulldozing" and tissue ballots rather than by the more peaceful method of constitutional amendment? The answer to this question is that the Negro has no greater grievances now than formerly, but that he has a much better opportunity for escaping these grievances than he has had heretofore. The driving causes in the South are not of themselves sufficient to bring about such an exodus as was recently observed. There must be an avenue of escape to apparently better conditions, and this was presented when the European war created a vacuum in the northern labor market.

The effects of this interstate migration, like the effects of late foreign immigration, are largely matters of the future. But certain postulates with regard to the immediate effects may be readily formulated. So far as the migrations tend to bring about an equilibration of demand and supply in the labor markets of this country, the effect will be beneficial. The abundance of crude, cheap, and easily managed labor in the cotton belt has not been

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an unmixed blessing. It is a well-established fact, too, that the Negro does better in those districts where he is greatly outnumbered by the whites than he does in the black belts where he has little chance to study and emulate the white man's skill, thrift, and energy. The Negroes who go north may thus increase their own productive capacity, and at the same time, by relieving somewhat the congestion of black folk in their old homes, may improve the economic status of their neighbors who remain behind. A migration of Negroes in any number is likely also to affect the attitude of the southern employer of colored labor. It will tend to impress him with the idea of the black man's economic value as he had not been impressed before. The exodus of 1879 effected such a change of attitude on the part of the Mississippi River planters. A large number of them assembled in Vicksburg on May 5, 1879, and solemnly resolved "that the colored race has been placed by the Constitution of the United States, and the states here represented, on a plane of absolute legal equality with the white race," and "that the colored race shall be accorded the practical enjoyment of all rights, civil and political, guaranteed by the said constitutions and laws."[1]

The migration has also its debit side. As already stated, it is a cityward movement of a rural population, and as such is attended with all the difficulties and dangers incident to such a movement on the part of any people. But there are additional difficulties when the newcomers to a city—even a northern city—chance to be colored. They must live in the least desirable part of the town, on filthy and neglected streets, and in poorly constructed, insanitary dwellings, for which they must frequently pay exorbitant rentals. There may be the additional handicap of industrial discrimination on account of race.

Dr. W. H. Crogman, of Clark University, Atlanta, Georgia, a well-known Negro educator, twenty years ago set forth the evils of this movement in the following words:

> Nothing was ever clearer to my mind than that this interstate migration has in it the seeds of moral death. It is a very Pandora's box. It strikes at the roots of those things by which only any people can hope to rise. It

[1] *Vicksburg Daily Commercial*, May 6, 1879.

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destroys the home wherever it is established, and prevents its establishment where it is not. It retards the progress of education and acts like a withering blight upon the influence of the churches. . . . . Over and over again have I known persons to leave their native state and after wandering through several others to return finally to the very spot whence they had started, having in that time gained nothing, acquired nothing, except that which is a property common to all bodies once set in motion—a tendency to keep moving.[1]

This statement, in the light of later developments, appears unduly pessimistic, and would probably be modified by its author today; but the fact cannot be gainsaid that the mere removal of the Negro to another environment is not the ultimate solution of what we call the "race problem"; at the most it can only modify the problem. As the European peasant does not escape all his economic ills when he stands for the first time under the Stars and Stripes, so the Negro will still have his troubles after crossing the Mason and Dixon line.

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[1] *Talks for the Times*, pp. 253–54.

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NOTES

WASHINGTON NOTES

LOANS AND SECURITIES PRICES

The results of the government's second great loan operation for the year 1917 are now definitely known. Final statistics show that total subscriptions have amounted to more than four billion six hundred million dollars, an oversubscription of 54 per cent of the three billion dollars originally offered. This is a greater oversubscription than was received in the case of the first Liberty Loan when two billions were offered and about three billions of subscriptions were received. On this occasion a total of nine million four hundred thousand individual subscriptions were presented to the Treasury, and of these subscribers about 99 per cent subscribed in amounts ranging from fifty dollars to fifty thousand dollars.

While the success of the loan as measured by the volume of subscriptions and the number of subscribers has thus been phenomenal, the careful observer is equally interested in the conditions underlying the loan and the effect it is likely to exercise upon the banking and business community. A review of conditions as existing at the close of the operation shows that the assistance of the banks has been enlisted to a considerably greater extent than in the former transaction. Discounts of paper secured by government obligations, by Federal Reserve Banks, amounted on November 30 to $499,000,000 or about $400,000,000 more than the maximum of such discounts under the first Liberty Loan. No figures are as yet available to show in any reliable way what proportion of the bonds have been actually taken by the banks themselves as a matter of permanent ownership, and what proportion are being carried with a view to eventual liquidation by subscribers who are paying for them on the "instalment plan." The only thing that seems certain is that the aid of the banks has been more largely enlisted on this occasion than on the first, and that a somewhat longer period will be required to transfer the bonds completely to private ownership.

Various reasons for this condition of affairs may be cited. One is the fact that in subjecting the bonds to taxation to the extent determined upon in connection with this issue, the authorities of the govern-

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ment necessarily rendered them somewhat less attractive to persons of very large income desirous of escaping the super-tax. Again, the wide distribution given to the bonds and the presence of small subscribers in very large numbers imply the necessity for a very substantial amount of aid in the form of loans extended by the banks to persons who desire to pay for the bonds out of current income. Until a reasonable amount of time has been allowed for the paying off of these loans, the banks cannot expect to free themselves completely of this responsibility. The very great oversubscription and the wide distribution show conclusively that the saving and purchasing power of the community is much greater than had been expected, and that the nation at large possesses a power of absorbing securities which promises well for the success of the future government financing, heavy as it must be.

On the other hand, developments accompanying the loan suggest strongly the price that must be paid for this success. Severe declines in the market for securities have shown that even with great activity and prosperity on the part of basic industries they cannot maintain the selling values of their shares and bonds in the face of a general withdrawal of purchasing power. The government's lending operations, in fact, have resulted in a withdrawal of such purchasing power to an extent that almost unavoidably disturbs the investment market necessary for the maintenance of normal prices for ordinary securities. This condition of affairs is not one that need cause alarm in its purely speculative aspect, but is of more serious moment from two standpoints—that of the savings banks and other institutions that have purchased these securities at what was supposed to be normal prices, but which now find the value of their investments very greatly lowered; and that of the concerns themselves, which, if compelled to re-finance or to seek new capital for current employment, will find themselves obliged either to pay abnormally high rates of interest or to submit to a discount on their securities, which would be equivalent to the same thing. This is perhaps the most serious aspect of the financial situation brought about by government borrowing, and is of course unavoidable if it be granted that the supply of capital available in the market at any given time is limited, so that some purposes must be sacrificed in order to attain the success of others whose character is more necessary to the community.

CONTROL OF FOREIGN EXCHANGE

In accordance with the powers granted in the so-called trading with the enemy act (which became law on October 6) the President,

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on November 28, issued executive instructions transferring to the Federal Reserve Board, under supervision of the Treasury Department, the oversight and control of foreign exchange transactions. This, combined with the oversight of gold movements already intrusted to the Federal Reserve Board on behalf of the Treasury, gives to that organization a very broad power of controlling the foreign payments of the United States. Such power is of course closely entwined with, and dependent upon, the control of the movement of merchandise exercised under present conditions by the War Trade Board, but, taken in conjunction with the powers of the latter, it affords an almost absolute authority over foreign commerce. Relations with the belligerent countries of Europe are already practically upon a government-controlled basis by reason of the fact that the United States government is furnishing the means with which to finance the movement of the supplies and munitions required in the conduct of the war. Exchange relations with European neutrals are practically under war restriction and control because of the business connections existing between those nations and Germany. This confines the regulation of foreign exchange in any active sense largely to South America and the Orient.

As matters have developed since the coming on of the war, the United States, although having a large favorable balance of trade as against the rest of the world, finds itself subject to an unfavorable trade balance with respect to foreign neutral nations. This unfavorable balance would, in ordinary times, be cleared or offset against the favorable balances derived from trade with other countries, only a net balance remaining to be adjusted. The artificial restrictions upon, and interferences with, trade growing out of the present war have, however, greatly changed this condition of affairs, so that balances with each country have to be dealt with practically upon an independent basis. The main purpose of such control of foreign exchange is to provide a means of making payment at a reasonable rate for goods imported to the United States. This purpose, if it is to avoid the shipment of gold in payment for such goods, implies the adjustment of imports and exports so as to avoid the growth of a large balance unfavorable to the United States, the only possible alternative thereto being an arrangement whereby foreign countries would accept payments either in their own securities held by American citizens or in obligations of the United States or its domestic enterprises.

Probably less has hitherto been known about the details of the foreign exchange operations of American banks and banking houses

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than about those of any other country, and this has been particularly true since the opening of the present war. The system of inspection and licensing now to be put into effect will, however, provide new data of a kind not heretofore available and will render the problem considerably simpler than it now appears on the surface. The so-called depreciation of the American dollar in foreign markets, notwithstanding that in some of these very markets there is a debtor balance to the United States, is likely to continue to exist as long as the present artificial parity of relationship between the American dollar and the British pound sterling is maintained, as it now has been for some two years past. This situation makes the possible direct results to be expected from the proposed control of foreign exchange probably less striking and conclusive than they would otherwise be. The success to be had will itself depend very largely upon the actual requirements for necessary raw materials that must be filled, and the success experienced in inducing countries from which they are imported to take an equivalent amount of goods in payment.

GROWTH OF FEDERAL RESERVE SYSTEM

The movement of state-chartered institutions into the Federal Reserve System, which had already assumed considerable proportions during the month of October, has continued during November and now seems likely to be maintained until practically all of the larger state banks and trust companies of the country have entered the system. At the close of November the total capital and surplus of the 176 state member banks is announced as $427,000,000 and their total assets as $4,275,000,000. An analysis of the new membership throws some interesting light upon the attitude of the state banks toward the system.

The trust companies and larger institutions of the states, many of which have lately enrolled, are, in not a few cases, institutions whose membership is quite obviously not likely to be of direct profit to them because of the fact that their business does not involve a large investment in paper of the kinds now eligible for discount. On the other hand, a number of the incoming members are small institutions scattered over the country, which have apparently made application either because of a desire to strengthen the system in a time of national necessity or have found it to their interest as a matter of local prestige to obtain membership. While these institutions may and probably will from time to time be able to take advantage of the rediscount privileges of the system, it may be doubted how far they can steadily and consistently make use of it unless they modify their present type of business.

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The question is thus raised whether the great body of state banks is likely to be brought into membership as a result of the movement recently begun in that direction, and whether there may not be an increasing pressure of demand for the modification of the system in such a way as to permit of the discount of paper of the classes held by many of the state banks and trust companies.

In various quarters during the last session of Congress the latter suggestion was put forward and it was then urged by members of both Houses that the Federal Reserve Act be modified to permit the rediscount of paper based upon securities of various kinds. Bills to that effect were introduced; and this proposal, while mainly in the interest of the financial community at large, has an important and direct bearing upon the question of membership, since it has always been noted by the trust companies and by state bankers generally that the rigid requirements of the system with respect to the discounting of liquid paper considerably limited the extent to which state institutions could expect to take advantage of it. This seems to suggest that the future development of the Federal Reserve System may still be a matter for very serious consideration, the real point involved being the maintenance of its character as a strictly liquid commercial banking organization requiring its members to conform their business to its rules as against that of an institution designed partly to render relief or aid in operations which though desirable and necessary industrially might or might not be of a liquid commercial character. There seems to be no reason to think that this question must be disposed of in the immediate future, but it will quite clearly call for answer in one way or another before the Federal Reserve System attains its ultimate development.

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BOOK REVIEWS AND NOTICES

Workmen's Compensation. By J. E. RHODES, II. Macmillan, 1917. Pp. 225. $1.50.

Liability and Compensation Insurance. By RALPH H. BLANCHARD. D. Appleton & Co., 1917. Pp. 286. $2.00 net.

These two volumes constitute an important and timely contribution to the history of workmen's compensation in the United States. A difference in the aims of the authors causes some differences in the relative emphasis given to various phases of the subject. In *Workmen's Compensation*, Mr. Rhodes gives "a brief history of the workmen's compensation movement in this country, and an outline of the principles on which the system is based," while Mr. Blanchard's volume deals with the subject from the point of view of insurance. Both, however, cover the main features of the whole subject.

Workmen's Compensation is divided into ten chapters, dealing, respectively, with "An Introductory Survey," "Industrial Accidents and Accident Insurance," "The European Background," "Agitation in the United States," "Early Attempts in the United States," "The Constitutionality of Compensation Legislation," "Compensation Legislation in the United States," "The Insurance of the Compensation Obligation," "The Administration of Compensation Laws," and "Some Social Aspects of Workmen's Compensation." In the appendixes are given a summary of the movement in New York, a reprint of the "Standards for Workmen's Compensation Laws" of the American Association for Labor Legislation, and an excellent digest of the laws in force at the end of 1916. A list of references is appended to each chapter. The volume closes with an unclassified bibliography, a list of the cases cited but without references to the official reporter, and an index.

The work brings together valuable material from a number of sources. It attempts to show the place of workmen's compensation in the development of the industrial situation. Therefore, a great deal of space is given to the discussion of the industrial revolution, to various kinds of labor legislation, to methods of voluntary insurance against industrial accidents, and to the whole system of social insurance. The sections dealing specifically with workmen's compensation cover the

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history of the movement, the legislation and the principles on which it is based, constitutionality, administration, and methods of insuring. A general view of the whole subject is presented.

Mr. Blanchard's volume, *Liability and Compensation Insurance*, views the subject from a particular aspect. The work is divided into three parts. Part I, "Industrial Accidents and Their Prevention," presents briefly and clearly the facts of industrial accidents as far as we have statistics on them, the possibilities of accident prevention, and the results of such work. Part II deals with "Employers' Liability and Workmen's Compensation." Here, with more detail, are given the common law of employers' liability, a criticism of the system, the theory of workmen's compensation, the historical development in Germany, England, and the United States. The chief features of compensation legislation in this country are then presented in five chapters, and a final chapter deals with the constitutionality of the legislation. Part III, "Employers' Liability and Workmen's Compensation Insurance," is the especially valuable part of the work. The principles and practices of insurance are applied to workmen's compensation in ten chapters, covering the following subjects: "The Theory of Insurance as Applied to Employers' Liability and Workmen's Compensation," "Methods of Insurance," "The Policy Contract," "Manual Premium Rates," "Merit Rating," "Reserves," and "Insurance of the Catastrophe Hazard." In the appendixes are given the New York workmen's compensation law, and a form of a typical policy contract. The work closes with an index.

The rating problem presented by insurance of workmen's compensation obligations is clearly presented, the methods now being developed are discussed, criticisms are made and conclusions are drawn, and references are given to the best authorities on the problem. In the presentation of the insurance problem an important and timely contribution has been made.

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Standards of American Legislation. An Estimate of Restrictive and Constructive Factors. By ERNST FREUND. University of Chicago Press, 1917. Pp. xx+317. $1.50 net, postage extra; weight 1 lb. 10 oz.

This is a noteworthy contribution to the scientific improvement of our legal system. It purports to be an essay of constructive criticism

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rather than a systematic treatise. The book should appeal, not only to lawyers and students of law, but to teachers and students of political science, constitutional history, sociology, and social reform. It is one of those rare law books that may be read with pleasure and profit by the intelligent general reader.

Professor Freund is a pioneer in this field and in his method of attack. Perhaps if the book were entitled "Legislative Policies in American Constitutions, Statutes, and Common Law," this would give a better idea of the scope of the discussion.

The treatment of the various topics does not deal in glittering generalities but is replete with concrete, specific, and illuminating criticism. The very wealth of interesting detail and illustration makes it somewhat difficult at times to follow the trend and sequence of the discourse in its larger outlines. An attempt will be made in this review to give a concise survey of the book as a whole.

The Introduction shows how the courts have read legislative policies as to economic and social matters into that indefinite constitutional guaranty, "due process of law," and suggests an inquiry into a better basis for estimating the legitimacy of statutory policies with reference to individual rights other than precedent and implication from abstract formulas.

Chapter i traces the historic changes of legislative policy with reference to the rights of personality, freedom of thought and expression, the repression of unthrift and dissipation, the protection of public health and safety. The last part of this chapter gives an outline of the modern growth of social legislation and explains the hostile and suspicious attitude of the courts as resistance to a new concept of state functions which may prove revolutionary and socialistic.

Chapter ii, on "The Common Law and Public Policy," points out the failure of the courts to reckon with the legislative policy involved in their decisions and their effect on the relations of the different classes of the community. It is said that "the common law must be charged with having too much justice and too little policy," i.e., too little regard for social interests. It is the task of modern legislation to redress this individualistic cast and give expression to public interests.

Chapter iii, on "The Tasks and Hazards of Legislation," deals with the function of legislation in supplementing and correcting common-law defects in such matters as restraint of trade, nuisance, and liquor prohibition. It also deals with the validity of legislation in so far as it depends upon doubtful questions of fact and good faith, and in so far as it

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endeavors to enforce contested and immature standards of social and industrial obligations. The author dwells on the neglect of those, advocating new restrictions or requirements to substantiate their reforms by demonstrated facts and arguments. Those demanding legislative interference should make an adequate investigation and presentation of the evidence on which intelligent and just action can be taken.

Chapter iv deals with the legislative policies embodied in American state constitutions, such as the provisions with reference to banks, railroads, and corporations. It contains an interesting estimate of the position of fundamental rights under the police power, and brings out the point that indifference is the dominating attitude toward the guaranties of individual right, owing to the fact that they have proved inconvenient obstacles in the enforcement of social policies and industrial reforms.

Chapter v, "Judicial Doctrines," deals, for the most part, with the historical development of limitations on legislative power on the basis of general clauses, such as "due process." The author concludes that, although the courts are protecting now, in the name of due process, traditional economic policies and not merely cardinal or immutable principles of justice, there is no danger of permanent hindrance to legislative progress, but rather danger of inadequate protection for the policy of individual freedom.

In chapter vi, on "The Meaning of Principle in Legislation," the author makes perhaps his most original contributions in differentiating policy and principle in legislation. "Principle" he conceives as certain guiding ideals or rules which control the effectiveness and justice of legislative commands but which frequently go beyond constitutional requirements. One of the most interesting principles of legislation which the author formulates is that of correlation, by which he means the joining of essentially correlative rights and obligations. Observance of this principle would mean more carefully measured justice. Another principle is that of standardization which serves to advance certainty, objectivity, stability, and uniformity of law.

In the final chapter on "Constructive Factors" the author finds perhaps the greatest hope for establishing constructive principles of legislation (as contrasted with the negative restrictions which we have at present) in the further development of plans that have already been tried, namely: (1) the preparation of bills by special legislative commissions; (2) the delegation of power to administrative commissions; (3) the organization of drafting bureaus; and (4) the codification of standing causes.

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The author points out that American law schools at present neglect the legislative point of view and should give special courses in the problems of legislation, if the technical difficulties of giving such courses can be overcome.

H. W. BALLANTINE

URBANA, ILL.

Retail Buying. By CLIFTON C. FIELD. Harper Bros., 1917. Pp. 219. $1.25.

Two sets of books have developed in the field of economic activity. One of these has been academic and theoretical, centering about value, distribution, and marginal utility. The other has offered detailed advice on the best way to make a sale. The former failed very largely to reach the "practical business man," but flourished like the biblical green bay tree in college courses. The latter found no standing except among business men, and not a great deal there. More recently a new generation of business books has arisen, dealing with economic problems in a way unknown and probably impossible before.

These new books are of many different degrees of excellence, though one and all have the same purpose in view. This purpose is to develop out of the real business experience of "the street" certain broadly applicable principles that will prove helpful to other business men. Perhaps too much stress is being laid upon the business experience of the writers of these books, in the hope that a large experience will cover a multitude of defects. Nevertheless there is no denying that a wealth of new material is thus being accumulated on many phases of the many-sided problem of the modern business man. The writers have gone pioneering for facts and have performed a notable service by blazing the way for a more extended and mature treatment.

Such a book is Mr. Clifton C. Field's *Retail Buying*. It covers a part of the field hitherto neglected—the equipment and practices of the buyer of merchandise. The author declares at the very outset the laudable purpose to "provide a simple and readable explanation of what is best today in buying principles and practice." As in so many other departments of business activity today, it is desired here to displace the old-fashioned, empirical, "rule-of-thumb" methods with scientific principles. It is a noble ambition, of course, though one is rarely deceived, by a mere historical description or by an emphatic assertion that "this is the best way," into believing that he is getting the real stuff of business science. Here is another case where "knowledge comes, but wisdom lingers."

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In these new business books that contain much valuable new material, one must forever keep in mind the distinction between facts and principles, between business gossip and business science. "The old adage is 'Goods well bought are half sold'" (p. 1), which does quite well enough for good business advice, but is not business science. One swallow does not make a summer, nor one instance establish a principle. Writers of the new business books do not always remember this.

Retail Buying has been carefully analyzed. There are four parts, dealing respectively with "The Merchant as a Buyer," "Merchandise," "Buying Practice," and "Stock Systems." The first is purely introductory; the second has a valuable chapter on "Sources of Merchandise"; the third is by far the best section, containing an excellent chapter on "Determining Qualities"; the last seems considerably detached from the rest and without any close logical connection. This last part is covered by other books more thoroughly and extensively. It is especially difficult to see how "Instruction to Salespeople" (chap. xiii) belongs in a book that purports to be a scientific treatment of retail buying.

The style is matter of fact, almost laconic. There is an element of stiffness and bluntness in it that appears to arise from lack of practice in writing. The discussion, however, is clear and usually simple. Heavy-faced leads have been set in at every change of topic, like persistent guideposts—perhaps a bit too persistent for the complete comfort of the wayfarer. The cursory reader, however, is thus enabled the more readily to find the topics in which he is interested.

The real contribution in this book is to be found in Part III, entitled "Buying Practice." It is just here that an undeveloped field was entered. No one has written satisfactorily about the work of the purchasing agent, the merchandise buyer. The general practice and the "best" practice are both of interest and suggestive. A far more extended "scientific" treatment of the "merchandising plan" would do a good service by discussing merchandising stock plans from a "scientific" point of view.

The important function performed by the merchandise buyer, the broad training and experience necessary, are clearly presented. With a better background of theory the writer might have shown what a factor for business control an expert buyer may become, how far he partakes of the entrepreneurial power. Highly developed faculties, foresight, keen judgment, and the ability to discern long-time issues must be his. The final words of this volume are interesting in this connection: "All of this discussion leads back to the original statement—that the function

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of a buyer as a merchant is to buy merchandise according to a merchandise plan, to sell so as to make a satisfactory profit, and to manipulate his purchases so as to secure the proper number of turnovers and leave his stock in good condition at the end of the season. This is a big job for any man, for merchandising is a life's work, and it calls for the best efforts of a real merchant. Such a man is the ideal buyer."

C. S. DUNCAN

THE UNIVERSITY OF CHICAGO

Free Speech for Radicals. By THEODORE SCHROEDER. Riverside, Conn.: Hillacre Bookhouse, 1916. Pp. viii+206.

This book might appropriately be entitled "Free Speech for I.W.W.'s and Anarchists," for on the whole it undertakes the defense of this "most despised of all classes." In general, the writer treats his subject in a dispassionate manner and the book makes interesting reading, but the reader frequently is challenged to make active rejoinders to the many sweeping conclusions. In defending the right of free speech the author's premise would be stated something like this: free speech is a natural right guaranteed by the Constitution; any abridgment of the right is an abridgment of the Constitution and therefore wrong.

The implication of the eighteenth-century philosophy is obvious; but to go to his definition (p. 20): "By freedom of speech I do not mean the right to agree with the majority, but the right to say with impunity anything and everything which one chooses to say . . . . including even treason and assassination . . . . and to speak it with impunity so long as no actual material injury results to anyone, and when it results . . . . to punish only for the contribution to that material injury and not for the mere speech as such."

In the first place, the Constitution does not guarantee the right to everyone "to say with impunity anything and everything which one chooses"; this is a wrong interpretation, for the fundamental law merely restricts the commonwealths from passing anti-free-speech laws. But in order to satisfy his own logic Mr. Schroeder is forced to conclude that it is wrong to punish "free speech as such" because even to prefer the charge would violate the Constitution, even though crime be committed. In other words, the Constitution protects everyone against the charge of the abuse of free speech.

In the second place, his formula attempting a definition of police-power administration is, to say the least, amateurish. Does he mean that society must await "actual material injury" before undertaking self-protection? Evidently this is the idea, for on another page (p. 88) he states: "Freedom of speech is wrongfully abridged whenever an individual is suppressed or punished except on the basis of an ascertained, actual, and material injury or imminent danger thereof." The reader is left to imagine what kind of order would

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prevail under such a régime. The added burden which such a scheme would impose upon the already overtaxed police force in keeping down crime makes it undesirable as a reform measure. Furthermore, if established in one case, why not in all cases of a similar nature, such as the carrying of concealed weapons, attempted assault, or even the incorporation of a blackmail trust?

The doctrine throughout leans toward extreme liberty, and when the author argues "that the state has no existence except as a few fallible office holders" (p. 4), and that the government "is a human expedient . . . . subject to be abolished at the will of those who created it," and "that the legislature in protecting society must do it in such a way as not to prevent any single or social or personal use of that which is [merely] dangerous" (p. 113), and that "mere preparation such as might be useful in war, or in resistance to government but not followed by actual hostilities, is not treason" (p. 98), we accuse him of being the mere tool of his client, if not an active member of the clan.

In much the same vein he champions the right of freedom of the press, the disseminating of obscene literature, and the rights of personal liberty; and in this part many of his readers would advocate suppression.

Nearly one-half of the book is devoted to a description of the San Diego free-speech fight, which tells of the many inhumanities committed in the name of law and order over the free-speech right. It is far from the facts that intelligence is always brought to the solution of these acute crises in our civil experiences; a decided change is needed in the methods used to suppress anti-social demonstrations. The San Diego fight over free speech was a blot on the fair name of the nation; and a more constructive policy must be devised whereby a greater freedom of utterance than now exists is given to this class if the anarchy of San Diego is to be avoided. No doubt one of the greatest sources of social unrest and bitterness against the present order has been the attitude of the police toward public speaking. The man who gives vent to his feelings feels relieved, and is less impelled to commit violence than the man who broods over the suppression of his speech. Mr. Schroeder therefore concludes that the remedy lies in removing the justification and necessity for terrorism by establishing entire freedom of speech and of the press.

Will the granting of extreme liberty, as the author argues, solve the problem? Will this remedy the situation and give the anarchists what they are seeking for? The reviewer thinks not. Unhindered speech of the extreme type means the advocacy of the destruction of government—the advocacy of violent means to that end. It would end in violence, but not in the abolition of government, for the institution is founded on centuries-old traditions and obviously fills an indispensable function.

So long as law and order and the institution of government are sanctioned by society as contributory to progress, just so long will it resent any attempt to overthrow them; those who run counter to the general will must suffer in the contact.

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Conservation and Economic Theory. By RICHARD T. ELY. Reprint from Bulletin No. 109, January, 1916, American Institute of Mining Engineers. New York. Pp. 211–26.

Mr. Ely in this short monograph has attempted to "outline the field for the economist in conservation." As it would require a pretentious volume to complete the theory of conservation, Mr. Ely has been satisfied to give it here in the very briefest form. The outline proper is divided in two parts, namely, Part I, "Conservation Defined and Described," and Part II, "Some Economic Principles of Conservation." Part I is of relatively more importance as a contribution to economic literature, for the latter portion in the main merely restates in practically the old form the economics of present and future values as they apply to the question of conservation, and adds nothing new except perhaps the suggestion that the practical working out of the question lies in the creation of a conservation commission.

We are indebted to the writer for the following definition of "conservation" (p. 211):

> Narrowly and strictly considered it means preservation in unimpaired efficiency of the resources of the earth; or in a condition so nearly unimpaired as the nature of the case, or wise exhaustion, admits. And broadly considered, it means more than the word itself implies, for it naturally includes an examination of methods whereby the natural inheritance of the human race may be improved; and still more broadly considered . . . . it includes a treatment of the effects of productive conservation measures upon distribution.

Thus, in fine, it embraces four categories, namely, preservation of the natural resources, the improvement of the natural inheritance of the race, i.e., increasing their efficiency, social production, and, lastly, justice in distribution.

Justice in the distribution process, as the conservationist sees it, consists in checking or reducing the "private receipt of property or income beyond what is a fair return to capital and labor and enterprise reserving the surplus for public use." And in this, we are informed, is the central idea of true conservation. Much of the study of the subject belongs in the realm of the natural science, but as the end is human welfare, the former becomes submerged in the latter. Conservation as synonymous with preservation, emphasizes the present and past waste of natural resources, and suggests means of putting a stop to the waste; the main problem here is one of social control, "very frequently taking the form of public ownership and management." Increasing the qualitative and quantitative efficiency of the present resources by such technical devices as reforestation, impounding of water, soil conservation, etc., is only a part of the larger conservation concept; it emphasizes the technique which at times aims at enriching individuals at the general public expense, whereas, the larger meaning embraces the distributive problem as well as the science problem. Finally, conservation considered in the light of social production

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is largely a matter of the institution of property and contract and, the writer concludes, "we cannot make much progress until we have adopted the social theory of property and the social theory of contract."

The World Decision. By ROBERT HERRICK. Boston: Houghton Mifflin Co., 1916. 8vo, pp. 253. $1.25.

This recent addition to the literature of the present war may be described as a study in race psychology and national ideals. The author spent the greater part of last year in Italy and France, and has made a keen study of the attitudes of the Latin peoples. In his interpretation of the present struggle he is not concerned with the material or economic phases which have been so much emphasized by other writers. His interest lies rather in the ideals and impulses of which commercial rivalry or military operations are but the outward manifestations. To him the war appears as a conflict of ideals, a struggle between two opposed traditions of civilization. In this world-clash the significant thing is the "spiritual antagonism between the Latin and the German, between the two visions of the world which the German and the Latin imagine and seek to perpetuate" (p. 5). The fact that the Latin forces engaged possess less than half of the strength of the allied powers does not alter the author's firm conviction that the question at issue is whether the Latin or the German ideal shall dominate and assume the mental and spiritual leadership of the world.

Mr. Herrick has no patience with those who would condemn all wars as brutal, needless, or insane. While admitting all the horror and suffering which war involves, he maintains that circumstances may arise, and do arise, when the "pale concept of internationalism" cannot be expected to restrain the passion of patriotism. On the greater issues of life there is no possible neutrality, and patriotism is simply belief in an ideal. "Patriotism is the better part of man, his ideal of life woven in with his tissue. Men have always fought for these things—for their own earth, for their own kind, for their own ideal—and they will continue to give their blood for them as long as they are men, until wrong and unreason and aggression are effaced from the earth" (p. 95).

The National Budget System. By CHARLES WALLACE COLLINS. New York: Macmillan, 1917. 8vo, pp. vi+151. $1.25.

The author has attempted to present in this small volume a "simple and direct description of the budget system and its relation to our government suitable to be put into the hands of the layman." In the opinion of the reviewer the attempt has been successful.

After a brief review of the preparation, ratification, execution, and audit and control of the budget in Great Britain, France, Germany, Switzerland, and

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Japan, Mr. Collins sets forth in an interesting and accurate way the methods employed by our federal government. These methods are then criticized and the executive budget proposed as a substitute for them. He proposes "the preparation and submission to Congress by the President of an itemized program for the government for the coming fiscal year; the ratification of this program by Congress, without amendments increasing it on the basis of the principle of executive responsibility; the spending of the money by the executive; the audit of the accounts by some agency independent of the executive but reporting to Congress, and the approval of the accounts by Congress." In chap. xi, entitled "Constitutional and Legal Questions Involved," he indicates in detail how the necessary changes might be made without amendment of the Constitution. On the whole the argument presented is excellent, but some of the difficulties which would be involved under our present system of federal government are passed over with slight or no consideration.

The Issue. By J. W. HEADLAM. Boston: Houghton Mifflin Co., 1917. 12mo, pp. vii+159. $1.00.

This book is really an answer to German accusations that it is England who, by her immoderate demands, is barring the way to peace in Europe—a peace which Germany offers and has a number of times suggested. The attempt is made to prove that the real issue of the war is German desire to dominate all Europe. To establish his point, Mr. Headlam uses statements of German origin to show the basic reason why all suggestions for peace that have come from authoritative German sources are quite unacceptable. The sources used are the manifesto of the six industrial associations and that of the German professors, statements of the different party leaders, utterances of the Chancellor, and the written works of Prince von Bülow and Friedrich Naumann.

Germany cannot shift upon any other nation the blame of starting the war, says Mr. Headlam; for she deliberately defied the political custom of Europe by refusing "to allow the other powers to be consulted in a matter which had always been held to be a common European concern"—a conflict of interests between two powers. Therefore, there can be no lasting peace before Germany has changed her attitude and realizes that no one nation can hope to carry out her will against the united opposition of practically the whole of Europe. But peace will come "when Germany has learnt the lesson of the war, when it has found, as every other nation has had to learn, that the voice of Europe cannot be defied with impunity."

The Minimum Cost of Living. By WINIFRED STUART GIBBS. New York: Macmillan, 1917.

This study varies from other investigations of the cost of living in families of limited income in New York City in that the principles of scientific budget-making have been applied to the household expenditures. It therefore not

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only indicates the total amount required to satisfy minimum needs and the percentage that must go for each purpose under the best possible use of the income, but also suggests some of the possibilities for family welfare of carefully planned expenditure.

The experiment was carried on in seventy-five dependent families by the Home Economics Staff of the New York Association for Improving the Condition of the Poor. The plan included careful estimates of minimum requirements, instruction in carrying out the budget planned, lessons in cooking and sewing. The ninety-three pages which constitute the book are pretty largely taken up by detailed records of the seventy-five expense accounts, the seventy-five dietaries, etc. The comment in the text is accordingly quite brief and summary.

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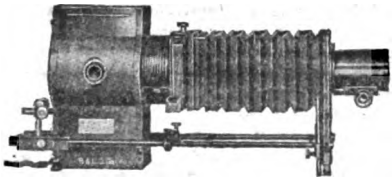

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